E 11

```
DDDDDDDDDDDD        IIIIIIIII     RRRRRRRRRRRR
DDDDDDDDDDDD        IIIIIIIII     RRRRRRRRRRRR
DDDDDDDDDDDD        IIIIIIIII     RRRRRRRRRRRR
DDD         DDD        III        RRR         RRR
DDD         DDD        III        RRR         RRR
DDD         DDD        III        RRR         RRR
DDD         DDD        III        RRR         RRR
DDD         DDD        III        RRR         RRR
DDD         DDD        III        RRR         RRR
DDD         DDD        III        RRRRRRRRRRRR
DDD         DDD        III        RRRRRRRRRRRR
DDD         DDD        III        RRRRRRRRRRRR
DDD         DDD        III        RRR   RRR
DDD         DDD        III        RRR   RRR
DDD         DDD        III        RRR   RRR
DDD         DDD        III        RRR      RRR
DDD         DDD        III        RRR      RRR
DDD         DDD        III        RRR      RRR
DDDDDDDDDDDD        IIIIIIIII     RRR         RRR
DDDDDDDDDDDD        IIIIIIIII     RRR         RRR
DDDDDDDDDDDD        IIIIIIIII     RRR         RRR
```

```
**FILE**ID**DISPLAY                                M 1




DDDDDDDD      IIIIII      SSSSSSSS  PPPPPPPP    LL            AAAAAA    YY      YY
DDDDDDDD      IIIIII      SSSSSSSS  PPPPPPPP    LL            AAAAAA    YY      YY
DD      DD      II      SS          PP      PP  LL          AA      AA  YY      YY
DD      DD      II      SS          PP      PP  LL          AA      AA  YY      YY
DD      DD      II      SS          PP      PP  LL          AA      AA    YY  YY
DD      DD      II      SS          PP      PP  LL          AA      AA    YY  YY
DD      DD      II        SSSSSS    PPPPPPPP    LL          AA      AA      YY
DD      DD      II        SSSSSS    PPPPPPPP    LL          AA      AA      YY
DD      DD      II              SS  PP          LL          AAAAAAAAAA      YY
DD      DD      II              SS  PP          LL          AAAAAAAAAA      YY
DD      DD      II              SS  PP          LL          AA      AA      YY          ....
DD      DD      II              SS  PP          LL          AA      AA      YY          ....
DDDDDDDD      IIIIII    SSSSSSSS    PP          LLLLLLLLLL  AA      AA      YY          ....
DDDDDDDD      IIIIII    SSSSSSSS    PP          LLLLLLLLLL  AA      AA      YY          ....


LL            IIIIII      SSSSSSSS
LL            IIIIII      SSSSSSSS
LL              II      SS
LL              II      SS
LL              II      SS
LL              II      SS
LL              II        SSSSSS
LL              II        SSSSSS
LL              II              SS
LL              II              SS
LL              II              SS
LL              II              SS
LLLLLLLLLL    IIIIII    SSSSSSSS
LLLLLLLLLL    IIIIII    SSSSSSSS
```

DI
VO

```
0 MODULE DISPLAY (
0                 LANGUAGE (BLISS32),
0                 IDENT = 'V04-000'
0                 ) =
0
1 BEGIN
1
1 !****************************************************************************
1 !*                                                                          *
1 !*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                                 *
1 !*  DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.                  *
1 !*  ALL RIGHTS RESERVED.                                                    *
1 !*                                                                          *
1 !*  THIS SOFTWARE IS FURNISHED UNDER A LICENSE AND MAY BE USED AND COPIED   *
1 !*  ONLY IN  ACCORDANCE WITH  THE  TERMS  OF  SUCH  LICENSE  AND WITH THE   *
1 !*  INCLUSION OF THE ABOVE COPYRIGHT NOTICE. THIS SOFTWARE OR  ANY  OTHER   *
1 !*  COPIES THEREOF MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY   *
1 !*  OTHER PERSON.  NO TITLE TO AND OWNERSHIP OF  THE  SOFTWARE IS  HEREBY   *
1 !*  TRANSFERRED.                                                            *
1 !*                                                                          *
1 !*  THE INFORMATION IN THIS SOFTWARE IS  SUBJECT TO CHANGE WITHOUT NOTICE   *
1 !*  AND  SHOULD  NOT  BE  CONSTRUED AS  A COMMITMENT BY DIGITAL EQUIPMENT   *
1 !*  CORPORATION.                                                            *
1 !*                                                                          *
1 !*  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE  OR  RELIABILITY OF ITS   *
1 !*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                 *
1 !*                                                                          *
1 !*                                                                          *
1 !****************************************************************************
1
1 !++
1 !
1 ! FACILITY:     DIRECTORY
1 !
1 ! ABSTRACT:
1 !
1 !       This module contains all of the routines necessary to display the
1 !       information gathered about the selected files.
1 !
1 ! ENVIRONMENT:
1 !
1 !       VAX/VMS operating system, unprivileged user mode utilities.
1 !
1 !--
1 !
1 ! AUTHOR:       L. Mark Pilant          CREATION DATE:  4-Mar-1983
1 !
1 ! MODIFIED BY:
1 !
1 !       V03-020 LMP0296         L. Mark Pilant,         6-Aug-1984  13:01
1 !               Access the file by "file-ID" during /FULL if the device is
1 !               a sequential device (i.e., a magtape).  This is to compensate
1 !               for a bug in the magtape ACP.
1 !
1 !       V03-019 LMP0282         L. Mark Pilant,         25-Jul-1984  9:58
1 !               Check the info needed flags, not the qualifier present flags,
1 !               when determining if information is needed about a file.
```

```
1 !
1 !     V03-018 LMP0227         L. Mark Pilant,         9-Apr-1984  11:20
1 !             Use FIB$L_ACL_STATUS to check the results of the READACL
1 !             operation.  Also, only read the ACL in 512 byte chunks, rather
1 !             than trying to read in the entire ACL.
1 !
1 !     V03-017 LMP0220         L. Mark Pilant,         24-Mar-1984  23:33
1 !             Remove references to journaling.
1 !
1 !     V03-016 LMP0212         L. Mark Pilant,         12-Mar-1984  15:01
1 !             Make sure that a new channel is allocated not only when
1 !             the device changes, but if no channel was previously assigned.
1 !
1 !     V03-015 LMP0211         L. Mark Pilant,         10-Mar-1984  12:49
1 !             Display all of the useful information obtained directly from
1 !             the disk ACP in the /FULL display.  Also correct a bug that
1 !             caused long file names to be truncated when the /SINCE
1 !             qualifier was the only qualifier given on the command line.
1 !
1 !     V03-014 LMP0187         L. Mark Pilant,         2-Feb-1984  17:29
1 !             Fix a bug that caused the first ACE to be dropped from the
1 !             ACL display during a full display.
1 !
1 !     V03-013 LMP0182         L. Mark Pilant,         11-Jan-1984  12:48
1 !             Only do selection when the /SELECT qualifier was given.
1 !
1 !     V03-012 LMP0176         L. Mark Pilant,         6-Dec-1983  9:08
1 !             Use the correct display width when formatting an ACE.
1 !
1 !     V03-011 LMP0171         L. Mark Pilant,         23-Nov-1983  10:08
1 !             Use the display width when formatting an ACE, not a fixed
1 !             value.  Also impliment the size selection item (this was
1 !             dropped on the floor).
1 !
1 !     V03-010 LMP0163         L. Mark Pilant,         10-Oct-1983  9:32
1 !             Correct a bug that caused an RMS IFI error when using any
1 !             of the common qualifiers (and RMS was gathering the info).
1 !
1 !     V03-009 LMP0160         L. Mark Pilant,         3-Oct-1983  15:10
1 !             Return the channel if the ACP QIO to get the file
1 !             information fails.
1 !
1 !     V03-008 LMP0157         L. Mark Pilant,         27-Sep-1983  10:57
1 !             Add support for a unique message file.
1 !
1 !     V03-007 LMP0155         L. Mark Pilant,         19-Sep-1983  11:33
1 !             Fix a bug that caused the RMS journaling names to be put
1 !             in the wrong place when obtained directly from the ACP.
1 !
1 !     V03-006 LMP0140         L. Mark Pilant,         24-Aug-1983  1:55
1 !             Remove temporary hack for identifiers.  Also, fix a bug
1 !             that caused second network access for network directories.
1 !
1 !     V03-005 DAS0001         David Solomon           29-Jul-1983
1 !             Journaling bit RUA is now ONLY_RU.
1 !
1 !     V03-004 LMP0119         L. Mark Pilant,         15-Jun-1983  11:58
```

```
;  115         0115   1 !               Add support for identifiers.
;  116         0116   1 !
;  117         0117   1 !       V03-003 LMP0108         L. Mark Pilant,         28-Apr-1983  11:05
;  118         0118   1 !               Don't double space when listing only the file name in
;  119         0119   1 !               one column.  Also, add support for RMS journaling.
;  120         0120   1 !
;  121         0121   1 !       V03-002 LMP0100         L. Mark Pilant,         14-Apr-1983  11:48
;  122         0122   1 !               Misc fixups.  Also add $FORMAT_ACL system service.
;  123         0123   1 !
;  124         0124   1 !       V03-001 LMP0096         L. Mark Pilant,         29-Mar-1983  10:10
;  125         0125   1 !               Correctly handle locked files.
;  126         0126   1 !
;  127         0127   1 !**
;  128         0128   1
;  129         0129   1 LIBRARY 'SYS$LIBRARY:LIB';
;  130         0130   1 REQUIRE 'SRC$:DIRECTDEF';
;  132        0532  1 FORWARD ROUTINE
;  133        0533  1         DIR$GET_INFO,                          ! Get information about a file
;  134        0534  1         DIR$RMS_FILL,                          ! Get specific info from RMS
;  135        0535  1         DIR$ACP_FILL,                          ! Get specific info from the ACP
;  136        0536  1         DIR$SHOW_INFO,                         ! Display gathered information
;  137        0537  1         DIR$SHOW_FULL,                         ! Display all information
;  138        0538  1         DIR$SHOW_ACL,                          ! Display the file's ACL
;  139        0539  1         DIR$TOTAL,                             ! Display per directory totals
;  140        0540  1         DIR$GRAND_TOTAL,                       ! Display overall totals
;  141        0541  1         DIR$APPEND;                            ! Append text to current line
;  142        0542  1
;  143        0543  1 OWN
;  144        0544  1         PROT_TABLE      : VECTOR [16]          ! Protection descr table
;  145        0545  1                           INITIAL (
;  146        0546  1                                   $DESCRIPTOR ('RWED'),
;  147        0547  1                                   $DESCRIPTOR ('WED'),
;  148        0548  1                                   $DESCRIPTOR ('RED'),
;  149        0549  1                                   $DESCRIPTOR ('ED'),
;  150        0550  1                                   $DESCRIPTOR ('RWD'),
;  151        0551  1                                   $DESCRIPTOR ('WD'),
;  152        0552  1                                   $DESCRIPTOR ('RD'),
;  153        0553  1                                   $DESCRIPTOR ('D'),
;  154        0554  1                                   $DESCRIPTOR ('RWE'),
;  155        0555  1                                   $DESCRIPTOR ('WE'),
;  156        0556  1                                   $DESCRIPTOR ('RE'),
;  157        0557  1                                   $DESCRIPTOR ('E'),
;  158        0558  1                                   $DESCRIPTOR ('RW'),
;  159        0559  1                                   $DESCRIPTOR ('W'),
;  160        0560  1                                   $DESCRIPTOR ('R'),
;  161        0561  1                                   $DESCRIPTOR ('')
;  162        0562  1                                     );
;  163        0563  1
;  164        0564  1 EXTERNAL ROUTINE
;  165        0565  1         LIB$GET_VM              : ADDRESSING_MODE (GENERAL),
;  166        0566  1         LIB$QUAL_FILE_MATCH     : ADDRESSING_MODE (GENERAL);
;  167        0567  1
;  168        0568  1 EXTERNAL LITERAL
;  169        0569  1         LIB$_FILFAIMAT,
;  170        0570  1
;  171        0571  1 ! DIRECTORY text messages
;  172        0572  1
;  173        0573  1         DIR$_NEWDIRECT,
;  174        0574  1         DIR$_NOBRFILEID,
;  175        0575  1         DIR$_NOBRCREDAT,
;  176        0576  1         DIR$_NOBRREVDAT,
;  177        0577  1         DIR$_NOBREXPDAT,
;  178        0578  1         DIR$_NOBRBAKDAT,
;  179        0579  1         DIR$_FULLFILEID,
;  180        0580  1         DIR$_NOFUFILEID,
;  181        0581  1         DIR$_FULLSIZE,
;  182        0582  1         DIR$_FULLOWNERID,
;  183        0583  1         DIR$_FULLOWNERUIC,
;  184        0584  1         DIR$_NOFUCREDAT,
;  185        0585  1         DIR$_FULLCREDAT,
;  186        0586  1         DIR$_NOFUREVDAT,
;  187        0587  1         DIR$_FULLREVDAT,
;  188        0588  1         DIR$_NOFUEXPDAT,
;   189        0589  1              DIR$_FULLEXPDAT,
;   190        0590  1              DIR$_NOFUBAKDAT,
;   191        0591  1              DIR$_FULLBAKDAT,
;   192        0592  1              DIR$_FILEORG,
;   193        0593  1              DIR$_FILORGSEQ,
;   194        0594  1              DIR$_FILORGREL,
;   195        0595  1              DIR$_FILORGIDX,
;   196        0596  1              DIR$_IDXPROLOG,
;   197        0597  1              DIR$_IDXAREA,
;   198        0598  1              DIR$_FILORGUNK,
;   199        0599  1              DIR$_FILEATTR,
;   200        0600  1              DIR$_MAXBKTSIZ,
;   201        0601  1              DIR$_BUCKETSIZ,
;   202        0602  1              DIR$_GBLBUFCNT,
;   203        0603  1              DIR$_VERLIMIT,
;   204        0604  1              DIR$_NOVERLIMIT,
;   205        0605  1              DIR$_FILATRCTG,
;   206        0606  1              DIR$_FILATRCTB,
;   207        0607  1              DIR$_FILATRLCK,
;   208        0608  1              DIR$_FILATRNOBAK,
;   209        0609  1              DIR$_FILATRWRBAK,
;   210        0610  1              DIR$_FILATRRDCHK,
;   211        0611  1              DIR$_FILATRWRCHK,
;   212        0612  1              DIR$_FILATRBADACL,
;   213        0613  1              DIR$_FILATRDIR,
;   214        0614  1              DIR$_FILATRBADBLK,
;   215        0615  1              DIR$_FILATRNOCHRG,
;   216        0616  1              DIR$_FILATRERASE,
;   217        0617  1              DIR$_RECFORMAT,
;   218        0618  1              DIR$_RECFMTFIX,
;   219        0619  1              DIR$_RECFMTVAR,
;   220        0620  1              DIR$_RECFMTVFC,
;   221        0621  1              DIR$_RECFMTUDF,
;   222        0622  1              DIR$_RECFMTSTM,
;   223        0623  1              DIR$_RECFMTSTMLF,
;   224        0624  1              DIR$_RECFMTSTMCR,
;   225        0625  1              DIR$_RECFMTUNK,
;   226        0626  1              DIR$_MAXRECSIZ,
;   227        0627  1              DIR$_RECATTR,
;   228        0628  1              DIR$_NORECATTR,
;   229        0629  1              DIR$_CRCARCTL,
;   230        0630  1              DIR$_FTNCARCTL,
;   231        0631  1              DIR$_PRICARCTL,
;   232        0632  1              DIR$_NOCARCTL,
;   233        0633  1              DIR$_NOSPAN,
;   234        0634  1              DIR$_JNLENABLED,
;   235        0635  1              DIR$_NOJNLENB,
;   236        0636  1              DIR$_BIJNLNAME,
;   237        0637  1              DIR$_NOBIJNL,
;   238        0638  1              DIR$_AIJNLNAME,
;   239        0639  1              DIR$_NOAIJNL,
;   240        0640  1              DIR$_ATJNLNAME,
;   241        0641  1              DIR$_NOATJNL,
;   242        0642  1              DIR$_FILEPROT,
;   243        0643  1              DIR$_SYSPROT,
;   244        0644  1              DIR$_OWNPROT,
;   245        0645  1              DIR$_GRPPROT,
;  246          0646  1             DIR$_WORPROT,
;  247          0647  1             DIR$_FILEACL,
;  248          0648  1             DIR$_NOFILEACL,
;  249          0649  1             DIR$_TOTSIZALL,
;  250          0650  1             DIR$_TOTSIZ,
;  251          0651  1             DIR$_TOTNOSIZ,
;  252          0652  1             DIR$_GTOTSIZALL,
;  253          0653  1             DIR$_GTOTSIZALL1,
;  254          0654  1             DIR$_GTOTSIZ,
;  255          0655  1             DIR$_GTOTSIZ1,
;  256          0656  1             DIR$_GTOTNOSIZ,
;  257          0657  1             DIR$_GTOTNOSIZ1;
;  258          0658  1
;  259          0659  1 ! Assumptions made about various RMS structure constants.
;  260          0660  1
;  261          0661  1 $ASSUME (FAB$C_SEQ EQL DIR_C_SEQUENTIAL*16);
;  262          0662  1 $ASSUME (FAB$C_REL EQL DIR_C_RELATIVE*16);
;  263          0663  1 $ASSUME (FAB$C_IDX EQL DIR_C_INDEXED*16);
;  264          0664  1
;  265          0665  1 $ASSUME (FAB$C_FIX EQL DIR_C_FIXED);
;  266          0666  1 $ASSUME (FAB$C_VAR EQL DIR_C_VARIABLE);
;  267          0667  1 $ASSUME (FAB$C_VFC EQL DIR_C_VFC);
;  268          0668  1 $ASSUME (FAB$C_UDF EQL DIR_C_UNDEFINED);
;  269          0669  1 $ASSUME (FAB$C_STM EQL DIR_C_STREAM);
;  270          0670  1 $ASSUME (FAB$C_STMLF EQL DIR_C_STREAMLF);
;  271          0671  1 $ASSUME (FAB$C_STMCR EQL DIR_C_STREAMCR);
```

```
1 GLOBAL ROUTINE DIR$GET_INFO (FILE_FAB) =
1
1 !++
1 !
1 ! FUNCTIONAL DESCRIPTION:
1 !       Get information about a file
1 !
1 ! CALLING SEQUENCE:
1 !       DIR$GET_INFO (ARG1)
1 !
1 ! INPUT PARAMETERS:
1 !       ARG1: FAB address
1 !
1 ! IMPLICIT INPUTS:
1 !       none
1 ! OUTPUT PARAMETERS:
1 !       none
1 !
1 ! IMPLICIT OUTPUTS:
1 !       none
1 !
1 ! ROUTINE VALUE:
1 !       1
1 !
1 ! SIDE EFFECTS:
1 !       none
1 !
1 !--
1
2 BEGIN
2
2 MAP
2       FILE_FAB        : REF $BBLOCK;          ! FAB address
2
2 LOCAL
2       FAB             : REF $BBLOCK,          ! Address of the FAB
2       NAM             : REF $BBLOCK,          ! NAMe block address
2       STATUS;                                 ! Local routine return status
2
2 EXTERNAL ROUTINE
2       DIR$FILE_ERROR;                         ! File error signaling routine
2
2 ! Assume success.
2
2 STATUS = SS$_NORMAL;
2
2 ! Set pointers to the necessary RMS data structures.
2
2 CH$MOVE (NAM$C_BLN, .FILE_FAB[FAB$L_NAM], INFO_NAM);    ! Copy NAMe block
2 NAM = INFO_NAM;                                         ! Set NAMe block address
2 FAB = .FILE_FAB;                                        ! Assume from $SEARCHed FAB
2
2 ! Check to see whether a legal file specification has been $SEARCHed.
2
2 IF NOT .(FAB[FAB$L_DEV])<$BITPOSITION (DEV$V_DIR), 1>
2 AND NOT .NAM[NAM$V_NODE]
2 THEN
```

```
;  330          0729  3         BEGIN
;  331          0730  3         FAB[FAB$L_STS] = SS$_NOTFILEDEV;
;  332          0731  3         FAB[FAB$L_STV] = 0;
;  333          0732  3         DIR$FILE_ERROR (DIR$_OPENIN, .FAB);
;  334          0733  3         RETURN 1;
;  335          0734  2         END;
;  336          0735  2
;  337          0736  2     IF .(FAB[FAB$L_DEV])<$BITPOSITION (DEV$V_FOR), 1>
;  338          0737  2     THEN
;  339          0738  3         BEGIN
;  340          0739  3         FAB[FAB$L_STS] = SS$_DEVFOREIGN;
;  341          0740  3         FAB[FAB$L_STV] = 0;
;  342          0741  3         DIR$FILE_ERROR (DIR$_OPENIN, .FAB);
;  343          0742  3         RETURN 1;
;  344          0743  2         END;
;  345          0744  2
;  346          0745  2     ! Fill some of the initial portions of the display block.
;  347          0746  2
;  348          0747  2     CH$FILL (0, DIR_C_LENGTH, .DISPLAY_BLOCK);
;  349          0748  2     DISPLAY_BLOCK[DIR_W_FID_NUM] = .NAM[NAM$W_FID_NUM];
;  350          0749  2     DISPLAY_BLOCK[DIR_W_FID_SEQ] = .NAM[NAM$W_FID_SEQ];
;  351          0750  2     DISPLAY_BLOCK[DIR_W_FID_RVN] = .NAM[NAM$W_FID_RVN];
;  352          0751  2     DISPLAY_BLOCK[DIR_B_FNS] = .NAM[NAM$B_RSL];
;  353          0752  2     CH$MOVE (.NAM[NAM$B_RSL], .NAM[NAM$L_RSA], DISPLAY_BLOCK[DIR_T_FILENAME]);
;  354          0753  2     CH$MOVE (NAM$C_DVI, NAM[NAM$T_DVI], DISPLAY_BLOCK[DIR_T_DVI]);
;  355          0754  2     DISPLAY_BLOCK[DIR_B_NODE] = .NAM[NAM$B_NODE];
;  356          0755  2     DISPLAY_BLOCK[DIR_B_DEV] = .NAM[NAM$B_DEV];
;  357          0756  2     DISPLAY_BLOCK[DIR_B_DIR] = .NAM[NAM$B_DIR];
;  358          0757  2     DISPLAY_BLOCK[DIR_B_VER] = .NAM[NAM$B_VER];
;  359          0758  2     DISPLAY_BLOCK[DIR_V_SQD] = .(FAB[FAB$L_DEV])<$BITPOSITION (DEV$V_SQD), 1>;
;  360          0759  2
;  361          0760  2     ! If it is not a network directory operation, it is necessary to change the
;  362          0761  2     ! FAB address for the following RMS/ACP operations.
;  363          0762  2
;  364          0763  2     IF NOT .NAM[NAM$V_NODE] THEN FAB = INFO_FAB;
;  365          0764  2
;  366          0765  2     ! Get the requested information about the file and put it in the display
;  367          0766  2     ! block.
;  368          0767  2
;  369          0768  2     IF .QUAL_FLAGS[DIR_V_NEED_FHC] OR .QUAL_FLAGS[DIR_V_NEED_DAT]
;  370          0769  2     OR .QUAL_FLAGS[DIR_V_NEED_PRO] OR .QUAL_FLAGS[DIR_V_NEED_SUM]
;  371          0770  2     OR .QUAL_FLAGS[DIR_V_NEED_JNL] OR .QUAL_FLAGS[DIR_V_QUAL_ACL]
;  372          0771  2     THEN
;  373          0772  3         BEGIN
;  374          0773  3         IF .NAM[NAM$V_NODE]
;  375          0774  3         THEN STATUS = DIR$RMS_FILL (.FAB, .NAM)
;  376          0775  3         ELSE STATUS = DIR$ACP_FILL (.FAB, .NAM);
;  377          0776  2         END;
;  378          0777  2
;  379          0778  2     DISPLAY_BLOCK[DIR_L_STATUS] = .STATUS;
;  380          0779  2
;  381          0780  2     ! See if this file matches the criteria specified by the common command
;  382          0781  2     ! qualifiers.
;  383          0782  2
;  384          0783  2     FAB[FAB$W_IFI] = -1;                                ! Since XAB info is there
;  385          0784  2     STATUS = LIB$QUAL_FILE_MATCH (CMN_QUAL_CTX, .FAB, 0, LINE_DESC);
;  386          0785  2     FAB[FAB$W_IFI] = 0;                                 ! Finished testing XAB info
```

```
2 IF .STATUS EQL LIB$_FILFAIMAT
2 THEN RETURN 1                                   ! Return if not a candidate
2 ELSE IF .DISPLAY_BLOCK[DIR_L_STATUS]
2      THEN DISPLAY_BLOCK[DIR_L_STATUS] = .STATUS;
2
2 ! Now that all of the specified common qualifiers have been checked, check
2 ! the file size if necessary.
2
2 IF .QUAL_FLAGS[DIR_V_SELE_SIZE]
3 AND .MIN_BLOCK GTR (IF .QUAL_FLAGS[DIR_V_SIZE_ALL] OR .QUAL_FLAGS[DIR_V_SIZE_ALLO]
3                     THEN .DISPLAY_BLOCK[DIR_L_HIBLK]
2                     ELSE .DISPLAY_BLOCK[DIR_L_EFBLK]) THEN RETURN 1;
2 IF .QUAL_FLAGS[DIR_V_SELE_SIZE]
3 AND .MAX_BLOCK LSS (IF .QUAL_FLAGS[DIR_V_SIZE_ALL] OR .QUAL_FLAGS[DIR_V_SIZE_ALLO]
3                     THEN .DISPLAY_BLOCK[DIR_L_HIBLK]
2                     ELSE .DISPLAY_BLOCK[DIR_L_EFBLK]) THEN RETURN 1;
2
2 ! The file is indeed a candidate for being displayed.  Proceed to do it.
2
2 QUAL_FLAGS[DIR_V_FILE_FOUND] = 1;               ! Note that something was found
2 IF .QUAL_FLAGS[DIR_V_QUAL_FULL]
2 THEN DIR$SHOW_FULL ()
2 ELSE DIR$SHOW_INFO ();
2
2 RETURN 1;
2
1 END;                                            ! End of routine DIR$GET_INFO

                                                   .TITLE  DISPLAY
                                                   .IDENT  \V04-000\

                                                   .PSECT  DIR$COMMON,NOEXE,  OVR,0

                                       00000 QUAL_FLAGS:
                                                   .BLKB   8
                                       00008 COLUMN_COUNT:
                                                   .BLKB   4
                                       0000C COLUMN_INDEX:
                                                   .BLKB   4
                                       00010 COLUMN_WIDTH:
                                                   .BLKB   4
                                       00014 WORST_ERROR:
                                                   .BLKB   4
                                       00018 CMN_QUAL_CTX:
                                                   .BLKB   4
                                       0001C DISPLAY_BLOCK:
                                                   .BLKB   4
                                       00020 CHANNEL:.BLKB  4
                                       00024 DEVICE_NAME:
                                                   .BLKB   16
                                       00034 LINE_DESC:
                                                   .BLKB   8
                                       0003C LINE_BUFFER:
                                                   .BLKB   1024
                                       0043C TOTAL_USED:
                                                   .BLKB   4
```

```
          00440 TOTAL_ALLOC:
                      .BLKB  4
          00444 TOTAL_FILES:
                      .BLKB  4
          00448 GRAND_USED:
                      .BLKB  4
          0044C GRAND_ALLOC:
                      .BLKB  4
          00450 GRAND_FILES:
                      .BLKB  4
          00454 GRAND_DIRS:
                      .BLKB  4
          00458 PREV_DIR:
                      .BLKB  255
          00557       .BLKB  1
          00558 PREV_DIR_LEN:
                      .BLKB  4
          0055C PREV_FILE:
                      .BLKB  255
          0065B       .BLKB  1
          0065C PREV_FILE_LEN:
                      .BLKB  4
          00660 VERSION_COUNT:
                      .BLKB  4
          00664 VERSION_INDEX:
                      .BLKB  4
          00668 FIRST_XAB:
                      .BLKB  4
      22  0066C INFO_XABJNL:
                      .BYTE  34
      3C  0066D       .BYTE  60
    0000  0066E       .WORD  0
00000000  00670       .LONG  0
    0000  00674       .WORD  0
    0000  00676       .WORD  0
      00  00678       .BYTE  0
      00  00679       .BYTE  0
    0000  0067A       .WORD  0
00000000  0067C       .LONG  0
      00  00680       .BYTE  0
      00  00681       .BYTE  0
    0000  00682       .WORD  0
00000000  00684       .LONG  0
      00  00688       .BYTE  0
      00  00689       .BYTE  0
    0000  0068A       .WORD  0
00000000  0068C       .LONG  0
          00690       .BLKB  24
      16  006A8 INFO_XABSUM:
                      .BYTE  22
      0C  006A9       .BYTE  12
    0000  006AA       .WORD  0
00000000  006AC       .LONG  0
      00  006B0       .BYTE  0
      00  006B1       .BYTE  0
    0000  006B2       .WORD  0
      13  006B4 INFO_XABPRO:
```

```
                                    .BYTE    19
          58   006B5                .BYTE    88
        0000   006B6                .WORD    0
    00000000   006B8                .LONG    0
        FFFF   006BC                .WORD    -1
          00   006BE                .BYTE    0
          00   006BF                .BYTE    0
  0000  0000   006C0                .WORD    0, 0
          00   006C4                .BYTE    0
          00   006C5                .BYTE    0
        0000   006C6                .WORD    0
    00000000   006C8                .LONG    0
    00000000   006CC                .LONG    0
        0000   006D0                .WORD    0
        0000   006D2                .WORD    0
    00000000   006D4                .LONG    0
    00000000   006D8                .LONG    0
               006DC                .BLKB    48
          12   0070C  INFO_XABDAT:
                                    .BYTE    18
          2C   0070D                .BYTE    44
        0000   0070E                .WORD    0
    00000000   00710                .LONG    0
        0000   00714                .WORD    0
        0000   00716                .WORD    0
   00000000#   00718                .LONG    0[2]
   00000000#   00720                .LONG    0[2]
    00000000   00728                .LONG    0
    00000000   0072C                .LONG    0
   00000000#   00730                .LONG    0[2]
          1D   00738  INFO_XABFHC:
                                    .BYTE    29
          2C   00739                .BYTE    44
        0000   0073A                .WORD    0
    00000000   0073C                .LONG    0
   00000000#   00740                .LONG    0[9]
          02   00764  INFO_NAM:
                                    .BYTE    2
          60   00765                .BYTE    96
          00   00766                .BYTE    0
          00   00767                .BYTE    0
    00000000   00768                .LONG    0
          00   0076C                .BYTE    0
          00   0076D                .BYTE    0
          00   0076E                .BYTE    0
          00   0076F                .BYTE    0
    00000000   00770                .LONG    0
    00000000   00774                .LONG    0
       0000#   00778                .WORD    0[8]
       0000#   00788                .WORD    0[3]
       0000#   0078E                .WORD    0[3]
    00000000   00794                .LONG    0
    00000000   00798                .LONG    0
          00   0079C                .BYTE    0
          00   0079D                .BYTE    0
          00   0079E                .BYTE    0
          00   0079F                .BYTE    0
```

```
              00  007A0                .BYTE    0
              00  007A1                .BYTE    0
              00# 007A2                .BYTE    0[2]
        00000000  007A4                .LONG    0
        00000000  007A8                .LONG    0
        00000000  007AC                .LONG    0
        00000000  007B0                .LONG    0
        00000000  007B4                .LONG    0
        00000000  007B8                .LONG    0
        00000000# 007BC                .LONG    0[2]
              03  007C4  INFO_FAB:
                                       .BYTE    3
              50  007C5                .BYTE    80
            0000  007C6                .WORD    0
        01000000  007C8                .LONG    16777216
        00000000  007CC                .LONG    0
        00000000  007D0                .LONG    0
        00000000  007D4                .LONG    0
            0000  007D8                .WORD    0
              02  007DA                .BYTE    2
              43  007DB                .BYTE    67
        00000000  007DC                .LONG    0
              00  007E0                .BYTE    0
              00  007E1                .BYTE    0
              00  007E2                .BYTE    0
              02  007E3                .BYTE    2
        00000000  007E4                .LONG    0
        00000000  007E8                .LONG    0
        00000000' 007EC                .ADDRESS INFO_NAM
        00000000  007F0                .LONG    0
        00000000  007F4                .LONG    0
              00  007F8                .BYTE    0
              00  007F9                .BYTE    0
            0000  007FA                .WORD    0
        00000000  007FC                .LONG    0
            0000  00800                .WORD    0
              00  00802                .BYTE    0
              00  00803                .BYTE    0
        00000000  00804                .LONG    0
        00000000  00808                .LONG    0
            0000  0080C                .WORD    0
              00  0080E                .BYTE    0
              00  0080F                .BYTE    0
        00000000  00810                .LONG    0
                  00814  DISPLAY_WIDTH:
                                       .BLKB    4
                  00818  FILENAME_WIDTH:
                                       .BLKB    4
                  0081C  OWNER_WIDTH:
                                       .BLKB    4
                  00820  SIZE_WIDTH:
                                       .BLKB    4
                  00824  MIN_BLOCK:
                                       .BLKB    4
                  00828  MAX_BLOCK:
                                       .BLKB    4
                  0082C  ACL_LENGTH:
```

```
                                       .BLKB    4
                    00830 OUTPUT_RAB:
                                       .BLKB    68

                                       .PSECT   $PLIT$,NOWRT,NOEXE,2

  44  45  57  52    00000 P.AAB:       .ASCII   \RWED\
        00000004    00004 P.AAA:       .LONG    4
        00000000'   00008              .ADDRESS P.AAB
      44  45  57    0000C P.AAD:       .ASCII   \WED\
                    0000F              .BLKB    1
        00000003    00010 P.AAC:       .LONG    3
        00000000'   00014              .ADDRESS P.AAD
      44  45  52    00018 P.AAF:       .ASCII   \RED\
                    0001B              .BLKB    1
        00000003    0001C P.AAE:       .LONG    3
        00000000'   00020              .ADDRESS P.AAF
          44  45    00024 P.AAH:       .ASCII   \ED\
                    00026              .BLKB    2
        00000002    00028 P.AAG:       .LONG    2
        00000000'   0002C              .ADDRESS P.AAH
      44  57  52    00030 P.AAJ:       .ASCII   \RWD\
                    00033              .BLKB    1
        00000003    00034 P.AAI:       .LONG    3
        00000000'   00038              .ADDRESS P.AAJ
          44  57    0003C P.AAL:       .ASCII   \WD\
                    0003E              .BLKB    2
        00000002    00040 P.AAK:       .LONG    2
        00000000'   00044              .ADDRESS P.AAL
          44  52    00048 P.AAN:       .ASCII   \RD\
                    0004A              .BLKB    2
        00000002    0004C P.AAM:       .LONG    2
        00000000'   00050              .ADDRESS P.AAN
              44    00054 P.AAP:       .ASCII   \D\
                    00055              .BLKB    3
        00000001    00058 P.AAO:       .LONG    1
        00000000'   0005C              .ADDRES_ P.AAP
      45  57  52    00060 P.AAR:       .ASCII   \RWE\
                    00063              .BLKB    1
        00000003    00064 P.AAQ:       .LONG    3
        00000000'   00068              .ADDRESS P.AAR
          45  57    0006C P.AAT:       .ASCII   \WE\
                    0006E              .BLKB    2
        00000002    00070 P.AAS:       .LONG    2
        00000000'   00074              .ADDRESS P.AAT
          45  52    00078 P.AAV:       .ASCII   \RE\
                    0007A              .BLKB    2
        00000002    0007C P.AAU:       .LONG    2
        00000000'   00080              .ADDRESS P.AAV
              45    00084 P.AAX:       .ASCII   \E\
                    00085              .BLKB    3
        00000001    00088 P.AAW:       .LONG    1
        00000000'   0008C              .ADDRESS P.AAX
          57  52    00090 P.AAZ:       .ASCII   \RW\
                    00092              .BLKB    2
        00000002    00094 P.AAY:       .LONG    2
        00000000'   00098              .ADDRESS P.AAZ
```

```
                                                       57  0009C P.ABB:   .ASCII  \W\                                                   ;
                                                           0009D          .BLKB   3
                                                00000001   000A0 P.ABA:   .LONG   1                                                     ;
                                                00000000'  000A4          .ADDRESS P.ABB                                                ;
                                                       52  000A8 P.ABD:   .ASCII  \R\                                                   ;
                                                           000A9          .BLKB   3
                                                00000001   000AC P.ABC:   .LONG   1                                                     ;
                                                00000000'  000B0          .ADDRESS P.ABD                                                ;
                                                           000B4 P.ABF:   .BLKB   0                                                     ;
                                                00000000   000B4 P.ABE:   .LONG   0                                                     ;
                                                00000000'  000B8          .ADDRESS P.ABF                                                ;

                                                                          .PSECT  $OWN$,NOEXE,2

00000000' 00000000' 00000000' 00000000' 00000000' 00000000' 00000 PROT_TABLE:
                                                                          .ADDRESS P.AAA, P.AAC, P.AAE, P.AAG, P.AAI, -                 ;
00000000' 00000000' 00000000' 00000000' 00000000' 00000000' 00018                  P.AAK, P.AAM, P.AAO, P.AAQ, P.AAS, P.AAU, -  ;
                    00000000' 00000000' 00000000' 00000000' 00030                  P.AAW, P.AAY, P.ABA, P.ABC, P.ABE            ;

                                                                          .EXTRN  LIB$GET_VM, LIB$QUAL_FILE_MATCH
                                                                          .EXTRN  LIB$_FI[FAIMAT, DIR$_NEWDIRECT
                                                                          .EXTRN  DIR$_NOBRFILEID
                                                                          .EXTRN  DIR$_NOBRCREDAT
                                                                          .EXTRN  DIR$_NOBRREVDAT
                                                                          .EXTRN  DIR$_NOBREXPDAT
                                                                          .EXTRN  DIR$_NOBRBAKDAT
                                                                          .EXTRN  DIR$_FULLFILEID
                                                                          .EXTRN  DIR$_NOFUFILEID
                                                                          .EXTRN  DIR$_FULLSIZE, DIR$_FULLOWNERID
                                                                          .EXTRN  DIR$_FULLOWNERUIC
                                                                          .EXTRN  DIR$_NOFUCREDAT
                                                                          .EXTRN  DIR$_FULLCREDAT
                                                                          .EXTRN  DIR$_NOFUREVDAT
                                                                          .EXTRN  DIR$_FULLREVDAT
                                                                          .EXTRN  DIR$_NOFUEXPDAT
                                                                          .EXTRN  DIR$_FULLEXPDAT
                                                                          .EXTRN  DIR$_NOFUBAKDAT
                                                                          .EXTRN  DIR$_FULLBAKDAT
                                                                          .EXTRN  DIR$_FILEORG, DIR$_FILORGSEQ
                                                                          .EXTRN  DIR$_FILORGREL, DIR$_FILORGIDX
                                                                          .EXTRN  DIR$_IDXPROLOG, DIR$_IDXAREA
                                                                          .EXTRN  DIR$_FILORGUNK, DIR$_FILEATTR
                                                                          .EXTRN  DIR$_MAXBKTSIZ, DIR$_BUCKETSIZ
                                                                          .EXTRN  DIR$_GBLBUFCNT, DIR$_VERLIMIT
                                                                          .EXTRN  DIR$_NOVERLIMIT
                                                                          .EXTRN  DIR$_FILATRCTG, DIR$_FILATRCTB
                                                                          .EXTRN  DIR$_FILATRLCK, DIR$_FILATRNOBAK
                                                                          .EXTRN  DIR$_FILATRWRBAK
                                                                          .EXTRN  DIR$_FILATRRDCHK
                                                                          .EXTRN  DIR$_FILATRWRCHK
                                                                          .EXTRN  DIR$_FILATRBADACL
                                                                          .EXTRN  DIR$_FILATRDIR, DIR$_FILATRBADBLK
                                                                          .EXTRN  DIR$_FILATRNOCHRG
                                                                          .EXTRN  DIR$_FILATRERASE
                                                                          .EXTRN  DIR$_RECFORMAT, DIR$_RECFMTFIX
                                                                          .EXTRN  DIR$_RECFMTVAR, DIR$_RECFMTVFC
                                                                          .EXTRN  DIR$_RECFMTUDF, DIR$_RECFMTSTM
```

```
                                                          .EXTRN  DIR$_RECFMTSTMLF
                                                          .EXTRN  DIR$_RECFMTSTMCR
                                                          .EXTRN  DIR$_RECFMTUNK, DIR$_MAXRECSIZ
                                                          .EXTRN  DIR$_RECATTR, DIR$_NORECATTR
                                                          .EXTRN  DIR$_CRCARCTL, DIR$_FTNCARCTL
                                                          .EXTRN  DIR$_PRICARCTL, DIR$_NOCARCTL
                                                          .EXTRN  DIR$_NOSPAN, DIR$_JNLENABLED
                                                          .EXTRN  DIR$_NOJNLENB, DIR$_BIJNLNAME
                                                          .EXTRN  DIR$_NOBIJNL, DIR$_AIJNLNAME
                                                          .EXTRN  DIR$_NOAIJNL, DIR$_ATJNLNAME
                                                          .EXTRN  DIR$_NOATJNL, DIR$_FILEPROT
                                                          .EXTRN  DIR$_SYSPROT, DIR$_OWNPROT
                                                          .EXTRN  DIR$_GRPPROT, DIR$_WORPROT
                                                          .EXTRN  DIR$_FILEACL, DIR$_NOFILEACL
                                                          .EXTRN  DIR$_TOTSIZALL, DIR$_TOTSIZ
                                                          .EXTRN  DIR$_TOTNOSIZ, DIR$_GTOTSIZALL
                                                          .EXTRN  DIR$_GTOTSIZALL1
                                                          .EXTRN  DIR$_GTOTSIZ, DIR$_GTOTSIZ1
                                                          .EXTRN  DIR$_GTOTNOSIZ, DIR$_GTOTNOSIZ1
                                                          .EXTRN  DIR$FILE_ERROR

                                                          .PSECT  $CODE$,NOWRT,2

                                          07FC 00000      .ENTRY  DIR$GET_INFO, Save R2,R3,R4,R5,R6,R7,R8,R9,-; 0672
                                                                  R10                                          ;
                           5A 00000000'  EF   9E 00002     MOVAB   QUAL_FLAGS, R10                              ;
                           59            01   D0 00009     MOVL    #1, STATUS                                   ; 0716
                           56        04  AC   D0 0000C     MOVL    FILE_FAB, R6                                 ; 0720
     0764   CA      28     B6      0060  8F   28 00010     MOVC3   #96, @40(R6), INFO_NAM                       ;
                           57      0764  CA   9E 00019     MOVAB   INFO_NAM, NAM                                ; 0721
                           58            56   D0 0001E     MOVL    R6, FAB                                      ; 0722
            0D      40     A8            03   E0 00021     BBS     #3, 64(FAB), 1$                              ; 0726
            08      36     A7            01   E0 00026     BBS     #1, 54(NAM), 1$                              ; 0727
                    08     A8      01CC  8F   3C 0002B     MOVZWL  #460, 8(FAB)                                 ; 0730
                           09            11      00031     BRB     2$                                           ; 0731
                    18       43          A8   E9 00033 1$: BLBC    67(FAB), 3$                                  ; 0736
                    08     A8        64  8F   9A 00037     MOVZBL  #100, 8(FAB)                                 ; 0739
                                     0C  A8   D4 0003C 2$: CLRL    12(FAB)                                      ; 0740
                                     58       DD 0003F     PUSHL   FAB                                          ; 0741
                             0079109A    8F   DD 00041     PUSHL   #7934106                                     ;
                    0000G   CF           02   FB 00047     CALLS   #2, DIR$FILE_ERROR                           ;
                                      011D    31 0004C     BRW     18$                                          ; 0742
                           56        1C  AA   D0 0004F 3$: MOVL    DISPLAY_BLOCK, R6                            ; 0747
01CB   8F           00     6E            00   2C 00053     MOVC5   #0, (SP), #0, #459, (R6)                     ;
                                         66      0005A                                                          ;
                    0123   C6        24  A7   D0 0005B     MOVL    36(NAM), 291(R6)                             ; 0748
                    0127   C6        28  A7   B0 00061     MOVW    40(NAM), 295(R6)                             ; 0750
                      18   A6        03  A7   90 00067     MOVB    3(NAM), 24(R6)                               ; 0751
                      50             03  A7   9A 0006C     MOVZBL  3(NAM), R0                                   ; 0752
            19      A6     04        B7  50   28 00070     MOVC3   R0, @4(NAM), 25(R6)                          ;
            08      A6     14        A7  10   28 00076     MOVC3   #16, 20(NAM), 8(R6)                          ; 0753
                    0119   C6        38  A7   B0 0007C     MOVW    56(NAM), 281(R6)                             ; 0754
                    011B   C6        3A  A7   90 00082     MOVB    58(NAM), 283(R6)                             ; 0756
                    011C   C6        3D  A7   90 00088     MOVB    61(NAM), 284(R6)                             ; 0757
      50       40   A8     01            05   EF 0008E     EXTZV   #5, #1, 64(FAB), R0                          ; 0758
 04   A6                   01            50   F0 00094     INSV    R0, #1, #1, 4(R6)                            ;
                           05        36  A7   01 E0 0009A  BBS     #1, 54(NAM), 4$                              ; 0763
```

```
                       58     07C4   CA  9E 0009F          MOVAB   INFO_FAB, FAB
                       17       04   AA  E8 000A4 4$:      BLBS    QUAL_FLAGS+4, 5$                      ; 0768
  12           04      AA            01  E0 000A8          BBS     #1, QUAL_FLAGS+4, 5$
  0D           04      AA            02  E0 000AD          BBS     #2, QUAL_FLAGS+4, 5$                  ; 0769
  08           04      AA            03  E0 000B2          BBS     #3, QUAL_FLAGS+4, 5$
  03           04      AA            04  E0 000B7          BBS     #4, QUAL_FLAGS+4, 5$                  ; 0770
                       1C            6A  E9 000BC          BLBC    QUAL_FLAGS, 8$
  0B           36      A7            01  E1 000BF 5$:      BBC     #1, 54(NAM), 6$                       ; 0774
                                     57  DD 000C4          PUSHL   NAM
                                     58  DD 000C6          PUSHL   FAB
            0000V      CF            02  FB 000C8          CALLS   #2, DIR$RMS_FILL
                                     09  11 000CD          BRB     7$
                                     57  DD 000CF 6$:      PUSHL   NAM                                   ; 0775
                                     58  DD 000D1          PUSHL   FAB
            0000V      CF            02  FB 000D3          CALLS   #2, DIR$ACP_FILL
                       59            50  D0 000D8 7$:      MOVL    R0, STATUS
               1C      BA            59  D0 000DB 8$:      MOVL    STATUS, @DISPLAY_BLOCK                ; 0778
               02      A8            01  AE 000DF          MNEGW   #1, 2(FAB)                            ; 0783
                                34   AA  9F 000E3          PUSHAB  LINE_DESC                             ; 0784
                                     7E  D4 000E6          CLRL    -(SP)
                                     58  DD 000E8          PUSHL   FAB
                                18   AA  9F 000EA          PUSHAB  CMN_QUAL_CTX
        00000000G      00            04  FB 000ED          CALLS   #4, LIB$QUAL_FILE_MATCH
                       59            50  D0 000F4          MOVL    R0, STATUS
                                02   A8  B4 000F7          CLRW    2(FAB)                                ; 0785
        00000000G      8F            59  D1 000FA          CMPL    STATUS, #LIB$_FILFAIMAT               ; 0786
                                     69  13 00101          BEQL    18$
               04               1C   BA  E9 00103          BLBC    @DISPLAY_BLOCK, 9$                    ; 0788
               1C      BA            59  D0 00107          MOVL    STATUS, @DISPLAY_BLOCK                ; 0789
  47           02      AA            02  E1 0010B 9$:      BBC     #2, QUAL_FLAGS+2, 16$                 ; 0794
                       50       1C   AA  D0 00110          MOVL    DISPLAY_BLOCK, R0                     ; 0796
  05           02      AA            04  E0 00114          BBS     #4, QUAL_FLAGS+2, 10$                 ; 0795
  07           02      AA            05  E1 00119          BBC     #5, QUAL_FLAGS+2, 11$
                       50     012D   C0  D0 0011E 10$:     MOVL    301(R0), R0                           ; 0796
                                     05  11 00123          BRB     12$
                       50     0131   C0  D0 00125 11$:     MOVL    305(R0), R0                           ; 0797
                       50     0824   CA  D1 0012A 12$:     CMPL    MIN_BLOCK, R0                         ; 0795
                                     3B  14 0012F          BGTR    18$
  21           02      AA            02  E1 00131          BBC     #2, QUAL_FLAGS+2, 16$                 ; 0798
                       50       1C   AA  D0 00136          MOVL    DISPLAY_BLOCK, R0                     ; 0800
  05           02      AA            04  E0 0013A          BBS     #4, QUAL_FLAGS+2, 13$                 ; 0799
  07           02      AA            05  E1 0013F          BBC     #5, QUAL_FLAGS+2, 14$
                       50     012D   C0  D0 00144 13$:     MOVL    301(R0), R0                           ; 0800
                                     05  11 00149          BRB     15$
                       50     0131   C0  D0 0014B 14$:     MOVL    305(R0), R0                           ; 0801
                       50     0828   CA  D1 00150 15$:     CMPL    MAX_BLOCK, R0                         ; 0799
                                     15  19 00155          BLSS    18$
               04      AA            20  88 00157 16$:     BISB2   #32, QUAL_FLAGS+4                     ; 0805
  07           01      AA            01  E1 0015B          BBC     #1, QUAL_FLAGS+1, 17$                 ; 0806
            0000V      CF            00  FB 00160          CALLS   #0, DIR$SHOW_FULL                     ; 0807
                                     05  11 00165          BRB     18$
            0000V      CF            00  FB 00167 17$:     CALLS   #0, DIR$SHOW_INFO                     ; 0808
                       50            01  D0 0016C 18$:     MOVL    #1, R0                                ; 0810
                                         04 0016F          RET                                           ; 0812

; Routine Size:  368 bytes,    Routine Base:  $CODE$ + 0000
```

```
1 ROUTINE DIR$RMS_FILL (FILE_FAB, FILE_NAM) =
1
1 !++
1 !
1 ! FUNCTIONAL DESCRIPTION:
1 !
1 !       This routine fills in the information requested from RMS.
1 !
1 ! CALLING SEQUENCE:
1 !       DIR$RMS_FILL (ARG1, ARG2)
1 !
1 ! INPUT PARAMETERS:
1 !       ARG1: address of the FAB
1 !       ARG2: address of the NAMe block
1 !
1 ! IMPLICIT INPUTS:
1 !       none
1 !
1 ! OUTPUT PARAMETERS:
1 !       none
1 !
1 ! IMPLICIT OUTPUTS:
1 !       none
1 !
1 ! ROUTINE VALUE:
1 !       1 if successful
1 !       error code otherwise
1 !
1 ! SIDE EFFECTS:
1 !       The necessary information is collected and put into the display
1 !       information block.
1 !
1 !--
1
2 BEGIN
2
2 MAP
2       FILE_FAB        : REF $BBLOCK,          ! Address of the FAB
2       FILE_NAM        : REF $BBLOCK;          ! Address of the NAMe block
2
2 LOCAL
2       STATUS;                                 ! Routine exit status
2
2 ! Set up for the RMS OPEN.
2
2 IF NOT .FILE_NAM[NAM$V_WILDCARD]
3 THEN STATUS = $SEARCH (FAB = .FILE_FAB)
2 ELSE STATUS = .FILE_FAB[FAB$L_STS];
2
2 ! If the STS is success and the STV is in error, set the return status to the
2 ! STV value.  This only happens on network directory operations, and is the
2 ! method by which RMS/FAL returns back any errors that occurred while
2 ! attempting to obtain the file attributes.
2
2 IF .FILE_FAB[FAB$L_STS] AND .FILE_FAB[FAB$L_STV] NEQ 0
2 THEN IF NOT .FILE_FAB[FAB$L_STV]
2 THEN STATUS = .FILE_FAB[FAB$L_STV];
```

```
:  472         0870  2
:  473         0871  2 IF .STATUS EQL RMS$_NOJ THEN STATUS = RMS$_NORMAL;
:  474         0872  2
:  475         0873  2 ! Now fill the display block with the information gathered by RMS.
:  476         0874  2
:  477         0875  2 DISPLAY_BLOCK[DIR_V_CONTIG] = .FILE_FAB[FAB$V_CTG];
:  478         0876  2 DISPLAY_BLOCK[DIR_V_CONTIGB] = .FILE_FAB[FAB$V_CBT];
:  479         0877  2 DISPLAY_BLOCK[DIR_V_SQD] = .(FILE_FAB[FAB$L_DEV])<$BITPOSITION (DEV$V_SQD), 1>;
:  480         0878  2 DISPLAY_BLOCK[DIR_L_HIBLK] = .FILE_FAB[FAB$L_ALQ];
:  481         0879  2 DISPLAY_BLOCK[DIR_W_DEFEXT] = .FILE_FAB[FAB$W_DEQ];
:  482         0880  2 DISPLAY_BLOCK[DIR_V_RTYPE] = .FILE_FAB[FAB$B_RFM];
:  483         0881  2 DISPLAY_BLOCK[DIR_V_FILEORG] = .FILE_FAB[FAB$B_ORG] / 16;
:  484         0882  2 IF (DISPLAY_BLOCK[DIR_B_VFCSIZE] = .FILE_FAB[FAB$B_FSZ]) EQL 0
:  485         0883  2 THEN DISPLAY_BLOCK[DIR_B_VFCSIZE] = 2;
:  486         0884  2 DISPLAY_BLOCK[DIR_B_RATTRIB] = .FILE_FAB[FAB$B_RAT];
:  487         0885  2 DISPLAY_BLOCK[DIR_B_BKTSIZE] = .FILE_FAB[FAB$B_BKS];
:  488         0886  2 DISPLAY_BLOCK[DIR_W_RSIZE] = .FILE_FAB[FAB$W_MRS];
:  489         0887  2 DISPLAY_BLOCK[DIR_W_GBC] = .FILE_FAB[FAB$W_GBC];
:  490         0888  2
:  491         0889  2 DISPLAY_BLOCK[DIR_W_VERLIMIT] = .INFO_XABFHC[XAB$W_VERLIMIT];
:  492         0890  2 IF (DISPLAY_BLOCK[DIR_L_EFBLK] = .INFO_XABFHC[XAB$L_EBK]) EQL 0
:  493         0891  2 THEN DISPLAY_BLOCK[DIR_L_EFBLK] = .FILE_FAB[FAB$L_ALQ]
:  494         0892  2 ELSE IF .INFO_XABFHC[XAB$W_FFB] EQL 0
:  495         0893  2 THEN DISPLAY_BLOCK[DIR_L_EFBLK] = .DISPLAY_BLOCK[DIR_L_EFBLK] - 1;
:  496         0894  2
:  497         0895  2 DISPLAY_BLOCK[DIR_L_CDT0] = .INFO_XABDAT[XAB$L_CDT0];
:  498         0896  2 DISPLAY_BLOCK[DIR_L_CDT4] = .INFO_XABDAT[XAB$L_CDT4];
:  499         0897  2 DISPLAY_BLOCK[DIR_L_RDT0] = .INFO_XABDAT[XAB$L_RDT0];
:  500         0898  2 DISPLAY_BLOCK[DIR_L_RDT4] = .INFO_XABDAT[XAB$L_RDT4];
:  501         0899  2 DISPLAY_BLOCK[DIR_L_EDT0] = .INFO_XABDAT[XAB$L_EDT0];
:  502         0900  2 DISPLAY_BLOCK[DIR_L_EDT4] = .INFO_XABDAT[XAB$L_EDT4];
:  503         0901  2 DISPLAY_BLOCK[DIR_L_BDT0] = .INFO_XABDAT[XAB$L_BDT0];
:  504         0902  2 DISPLAY_BLOCK[DIR_L_BDT4] = .INFO_XABDAT[XAB$L_BDT4];
:  505         0903  2 DISPLAY_BLOCK[DIR_W_REVISION] = .INFO_XABDAT[XAB$W_RVN];
:  506         0904  2
:  507         0905  2 DISPLAY_BLOCK[DIR_L_FILEOWNER] = .INFO_XABPRO[XAB$L_UIC];
:  508         0906  2 DISPLAY_BLOCK[DIR_W_FILEPROT] = .INFO_XABPRO[XAB$W_PRO];
:  509         0907  2
:  510         0908  2 DISPLAY_BLOCK[DIR_L_MRN] = .FILE_FAB[FAB$L_MRN];
:  511         0909  2 DISPLAY_BLOCK[DIR_B_NOKEYS] = .INFO_XABSUM[XAB$B_NOK];
:  512         0910  2 DISPLAY_BLOCK[DIR_W_PVN] = .INFO_XABSUM[XAB$W_PVN];
:  513         0911  2 DISPLAY_BLOCK[DIR_B_NOAREAS] = .INFO_XABSUM[XAB$B_NOA];
:  514         0912  2
:  515         0913  2 RETURN .STATUS;
:  516         0914  2
:  517         0915  1 END;                                          ! End of routine DIR$RMS_FILL


                                                               .EXTRN  SYS$SEARCH

                                     001C 00000 DIR$RMS_FILL:
                                                               .WORD   Save R2,R3,R4                                  ; 0813
                   54 00000000'   EF   9E 00002                MOVAB   DISPLAY_BLOCK, R4                              ;
                   52       04    AC   D0 00009                MOVL    FILE_FAB, R2                                   ; 0859
                   50       08    AC   D0 0000D                MOVL    FILE_NAM, R0                                   ; 0858
                   0B       35    A0   E8 00011                BLBS    53(R0), 1$                                     ;
```

```
                                                       52  DD 00015         PUSHL    R2                                           ; 0859
                             00000000G  00             01  FB 00017         CALLS    #1, SYS$SEARCH
                                                       04  11 0001E         BRB      2$
                                        50        08   A2  D0 00020 1$:     MOVL     8(R2), STATUS                                ; 0860
                                        0D        08   A2  E9 00024 2$:     BLBC     8(R2), 3$                                    ; 0867
                                                  0C   A2  D5 00028         TSTL     12(R2)
                                                       08  13 0002B         BEQL     3$
                                        04        0C   A2  E8 0002D         BLBS     12(R2), 3$                                   ; 0868
                                        50        0C   A2  D0 00031         MOVL     12(R2), STATUS                               ; 0869
                             0001C154   8F             50  D1 00035 3$:     CMPL     STATUS, #115028                              ; 0871
                                                       07  12 0003C         BNEQ     4$
                                        50  00010001   8F  D0 0003E         MOVL     #65537, STATUS
                                        51             64  D0 00045 4$:     MOVL     DISPLAY_BLOCK, R1                            ; 0875
            53       06   A2            01             04  EF 0004B         EXTZV    #4, #1, 6(R2), R3
     0149   C1            01            07             53  F0 0004E         INSV     R3, #7, #1, 329(R1)
            53       06   A2            01             05  EF 00055         EXTZV    #5, #1, 6(R2), R3                            ; 0876
     0149   C1            01            05             53  F0 0005B         INSV     R3, #5, #1, 329(R1)
            53       40   A2            01             05  EF 00062         EXTZV    #5, #1, 64(R2), R3                           ; 0877
       04   A1            01            01             53  F0 00068         INSV     R3, #1, #1, 4(R1)
                                 012D   C1        10   A2  D0 0006E         MOVL     16(R2), 301(R1)                              ; 0878
                                 013B   C1        14   A2  B0 00074         MOVW     20(R2), 315(R1)                              ; 0879
     0129   C1            04            00        1F   A2  F0 0007A         INSV     31(R2), #0, #4, 297(R1)                      ; 0880
                                        53        1D   A2  9A 00082         MOVZBL   29(R2), R3                                   ; 0881
                                        53             10  C6 00086         DIVL2    #16, R3
     0129   C1            04            04             53  F0 00089         INSV     R3, #4, #4, 297(R1)
                                 0138   C1        3F   A2  90 00090         MOVB     63(R2), 312(R1)                              ; 0882
                                                       05  12 00096         BNEQ     5$
                                 0138   C1             02  90 00098         MOVB     #2, 312(R1)                                  ; 0883
                                 012A   C1        1E   A2  90 0009D 5$:     MOVB     30(R2), 298(R1)                              ; 0884
                                 0137   C1        3E   A2  90 000A3         MOVB     62(R2), 311(R1)                              ; 0885
                                 012B   C1        36   A2  B0 000A9         MOVW     54(R2), 299(R1)                              ; 0886
                                 013D   C1        48   A2  B0 000AF         MOVW     72(R2), 317(R1)                              ; 0887
                                 011D   C1      0742   C4  B0 000B5         MOVW     INFO_XABFHC+38, 285(R1)                      ; 0889
                                        53      0131   C1  9E 000BC         MOVAB    305(R1), R3                                  ; 0890
                                        63      072C   C4  D0 000C1         MOVL     INFO_XABFHC+16, (R3)
                                                       06  12 000C6         BNEQ     6$
                                        63        10   A2  D0 000C8         MOVL     16(R2), (R3)                                 ; 0891
                                                       08  11 000CC         BRB      7$
                                                0730   C4  B5 000CE 6$:     TSTW     INFO_XABFHC+20                               ; 0892
                                                       02  12 000D2         BNEQ     7$
                                                       63  D7 000D4         DECL     (R3)                                         ; 0893
                                 0170   C1      0704   C4  7D 000D6 7$:     MOVQ     INFO_XABDAT+20, 368(R1)                      ; 0895
                                 0178   C1      06FC   C4  7D 000DD         MOVQ     INFO_XABDAT+12, 376(R1)                      ; 0897
                                 0180   C1      070C   C4  7D 000E4         MOVQ     INFO_XABDAT+28, 384(R1)                      ; 0899
                                 0188   C1      0714   C4  7D 000EB         MOVQ     INFO_XABDAT+36, 392(R1)                      ; 0901
                                 016E   C1      06F8   C4  B0 000F2         MOVW     INFO_XABDAT+8, 366(R1)                       ; 0903
                                 014E   C1      06A4   C4  D0 000F9         MOVL     INFO_XABPRO+12, 334(R1)                      ; 0905
                                 0152   C1      06A0   C4  B0 00100         MOVW     INFO_XABPRO+8, 338(R1)                       ; 0906
                                 0190   C1        38   A2  D0 00107         MOVL     56(R2), 400(R1)                              ; 0908
                                 0194   C1      0694   C4  D0 0010D         MOVL     INFO_XABSUM+8, 404(R1)                       ; 0911
                                                           04 00114         RET                                                   ; 0915

; Routine Size:  277 bytes,    Routine Base:  $CODE$ + 0170
```

```
1 ROUTINE DIR$ACP_FILL (FILE_FAB, FILE_NAM) =
1
1 !++
1 !
1 ! FUNCTIONAL DESCRIPTION:
1 !
1 !       This routine gathers the requested information about the file from
1 !       the ACP.
1 !
1 ! CALLING SEQUENCE:
1 !       DIR$ACP_FILL (ARG1, ARG2))
1 !
1 ! INPUT PARAMETERS:
1 !       ARG1: address of the FAB
1 !       ARG2: address of the NAMe block
1 !
1 ! IMPLICIT INPUTS:
1 !       none
1 !
1 ! OUTPUT PARAMETERS:
1 !       none
1 !
1 ! IMPLICIT OUTPUTS:
1 !       none
1 !
1 ! ROUTINE VALUE:
1 !       1 if successful
1 !       error code otherwise
1 !
1 ! SIDE EFFECTS:
1 !       The information display block if filled in with the necessary
1 !       information requested.
1 !
1 !--
1
2 BEGIN
2
2 MAP
2       FILE_FAB        : REF $BBLOCK,          ! Address of the FAB
2       FILE_NAM        : REF $BBLOCK;          ! Address of the NAMe block
2
2 LITERAL
2       NUM_ATTR        = 20;                   ! Max number of ACP attributes
2
2 LOCAL
2       DEVICE_DESC     : $BBLOCK [DSC$C_S_BLN],        ! Device name descriptor
2       FILE_DESC       : $BBLOCK [DSC$C_S_BLN],        ! File name descriptor
2       FIB_DESC        : $BBLOCK [DSC$C_S_BLN],        ! FIB descriptor
2       FIB             : $BBLOCK [FIB$C_LENGTH],       ! FIB Storage
2       ATTRIBUTES      : BLOCKVECTOR [NUM_ATTR, 8, BYTE],      ! Attribute descrs
2       ACP_STATISTICS  : $BBLOCK [ATR$S_STATBLK],      ! ACP statistics block
2       AI_JNLACE       : $BBLOCK [ATR$S_FNDACETYP],    ! AI journal ACE
2       BI_JNLACE       : $BBLOCK [ATR$S_FNDACETYP],    ! BI journal ACE
2       AT_JNLACE       : $BBLOCK [ATR$S_FNDACETYP],    ! AT journal ACE
2       IOSTS           : VECTOR [4, WORD],     ! I/O status block
2       STATUS;                                 ! Local routine exit status
2
```

```
  2 ! If necessary, first assign a channel to the device.
  2
  2 IF CH$NEQ (NAM$C_DVI, FILE_NAM[NAM$T_DVI], NAM$C_DVI, DEVICE_NAME, 0)
  2 OR .CHANNEL EQL 0
  2 THEN
  3     BEGIN
  3     IF .CHANNEL NEQ 0 THEN $DASSGN (CHAN = .CHANNEL);
  3     CH$MOVE (NAM$C_DVI, FILE_NAM[NAM$T_DVI], DEVICE_NAME);
  3     CH$FILL (0, DSC$C_S_BLN, DEVICE_DESC);
  3     DEVICE_DESC[DSC$W_LENGTH] = .DEVICE_NAME[0];
  3     DEVICE_DESC[DSC$A_POINTER] = DEVICE_NAME[1];
P 3     STATUS = $ASSIGN (DEVNAM = DEVICE_DESC,
  3                       CHAN = CHANNEL);
  3     IF NOT .STATUS
  3     THEN
  4         BEGIN
  4         CH$FILL (0, NAM$C_DVI, DEVICE_NAME);
  4         CHANNEL = 0;
  4         RETURN .STATUS;
  3         END;
  2     END;
  2
  2 ! Build the ACP attribute list for the needed information.
  2
  2 CH$FILL (0, NUM_ATTR*8, ATTRIBUTES);
  2 ATTRIBUTES [0, ATR$W_TYPE] = ATR$C_RECATTR;
  2 ATTRIBUTES [0, ATR$W_SIZE] = ATR$S_RECATTR;
  2 ATTRIBUTES [0, ATR$L_ADDR] = DISPLAY_BLOCK[DIR_R_RECATTR];
  2 ATTRIBUTES [1, ATR$W_TYPE] = ATR$C_CREDATE;
  2 ATTRIBUTES [1, ATR$W_SIZE] = ATR$S_CREDATE;
  2 ATTRIBUTES [1, ATR$L_ADDR] = DISPLAY_BLOCK[DIR_Q_CREDATE];
  2 ATTRIBUTES [2, ATR$W_TYPE] = ATR$C_REVDATE;
  2 ATTRIBUTES [2, ATR$W_SIZE] = ATR$S_REVDATE;
  2 ATTRIBUTES [2, ATR$L_ADDR] = DISPLAY_BLOCK[DIR_Q_REVDATE];
  2 ATTRIBUTES [3, ATR$W_TYPE] = ATR$C_EXPDATE;
  2 ATTRIBUTES [3, ATR$W_SIZE] = ATR$S_EXPDATE;
  2 ATTRIBUTES [3, ATR$L_ADDR] = DISPLAY_BLOCK[DIR_Q_EXPDATE];
  2 ATTRIBUTES [4, ATR$W_TYPE] = ATR$C_BAKDATE;
  2 ATTRIBUTES [4, ATR$W_SIZE] = ATR$S_BAKDATE;
  2 ATTRIBUTES [4, ATR$L_ADDR] = DISPLAY_BLOCK[DIR_Q_BAKDATE];
  2 ATTRIBUTES [5, ATR$W_TYPE] = ATR$C_STATBLK;
  2 ATTRIBUTES [5, ATR$W_SIZE] = ATR$S_STATBLK;
  2 ATTRIBUTES [5, ATR$L_ADDR] = ACP_STATISTICS;
  2 ATTRIBUTES [6, ATR$W_TYPE] = ATR$C_UIC;
  2 ATTRIBUTES [6, ATR$W_SIZE] = ATR$S_UIC;
  2 ATTRIBUTES [6, ATR$L_ADDR] = DISPLAY_BLOCK[DIR_L_FILEOWNER];
  2 ATTRIBUTES [7, ATR$W_TYPE] = ATR$C_FPRO;
  2 ATTRIBUTES [7, ATR$W_SIZE] = ATR$S_FPRO;
  2 ATTRIBUTES [7, ATR$L_ADDR] = DISPLAY_BLOCK[DIR_W_FILEPROT];
  2 ATTRIBUTES [8, ATR$W_TYPE] = ATR$C_UCHAR;
  2 ATTRIBUTES [8, ATR$W_SIZE] = ATR$S_UCHAR;
  2 ATTRIBUTES [8, ATR$L_ADDR] = DISPLAY_BLOCK[DIR_L_FILECHAR];
  2 ATTRIBUTES [9, ATR$W_TYPE] = ATR$C_ASCDATES;
  2 ATTRIBUTES [9, ATR$W_SIZE] = 2;
  2 ATTRIBUTES [9, ATR$L_ADDR] = DISPLAY_BLOCK[DIR_W_REVISION];
  2 ATTRIBUTES [10, ATR$W_TYPE] = ATR$C_JOURNAL;
  2 ATTRIBUTES [10, ATR$W_SIZE] = ATR$S_JOURNAL;
  2 ATTRIBUTES [10, ATR$L_ADDR] = DISPLAY_BLOCK[DIR_W_JOURNAL];
  2 ATTRIBUTES [11, ATR$W_TYPE] = ATR$C_FNDACETYP;
  2 ATTRIBUTES [11, ATR$W_SIZE] = ATR$S_FNDACETYP;
  2 ATTRIBUTES [11, ATR$L_ADDR] = AI_JNLACE;
  2 ATTRIBUTES [12, ATR$W_TYPE] = ATR$C_FNDACETYP;
  2 ATTRIBUTES [12, ATR$W_SIZE] = ATR$S_FNDACETYP;
  2 ATTRIBUTES [12, ATR$L_ADDR] = BI_JNLACE;
  2 ATTRIBUTES [13, ATR$W_TYPE] = ATR$C_FNDACETYP;
  2 ATTRIBUTES [13, ATR$W_SIZE] = ATR$S_FNDACETYP;
  2 ATTRIBUTES [13, ATR$L_ADDR] = AT_JNLACE;
  2 ATTRIBUTES [14, ATR$W_TYPE] = ATR$C_ACLLENGTH;
  2 ATTRIBUTES [14, ATR$W_SIZE] = ATR$S_ACLLENGTH;
  2 ATTRIBUTES [14, ATR$L_ADDR] = ACL_LENGTH;
  2
  2 ! Set up for the ACE locate operation necessary to get the RMS journal
  2 ! information.
  2
  2 AI_JNLACE[ACE$B_SIZE] = 0;
  2 AI_JNLACE[ACE$B_TYPE] = ACE$C_AIJNL;
  2 BI_JNLACE[ACE$B_SIZE] = 0;
  2 BI_JNLACE[ACE$B_TYPE] = ACE$C_BIJNL;
  2 AT_JNLACE[ACE$B_SIZE] = 0;
  2 AT_JNLACE[ACE$B_TYPE] = ACE$C_ATJNL;
  2
  2 ! Issue the ACP QIO to get the needed information.
  2
  2 CH$FILL (0, FIB$C_LENGTH, FIB);
  2 CH$FILL (0, DSC$C_S_BLN, FIB_DESC);
  2 FIB_DESC[DSC$W_LENGTH] = FIB$C_LENGTH;
  2 FIB_DESC[DSC$A_POINTER] = FIB;
  2
  2 IF .QUAL_FLAGS[DIR_V_QUAL_FULL]
  2 AND NOT .DISPLAY_BLOCK[DIR_V_SQD]
  2 THEN
  3     BEGIN
  3     FIB[FIB$W_DID_NUM] = .FILE_NAM[NAM$W_DID_NUM];
  3     FIB[FIB$W_DID_SEQ] = .FILE_NAM[NAM$W_DID_SEQ];
  3     FIB[FIB$W_DID_RVN] = .FILE_NAM[NAM$W_DID_RVN];
  3     CH$FILL (0, DSC$C_S_BLN, FILE_DESC);
  3     FILE_DESC[DSC$W_LENGTH] = .FILE_NAM[NAM$B_NAME] +
  3                               .FILE_NAM[NAM$B_TYPE] +
  3                               .FILE_NAM[NAM$B_VER];
  3     FILE_DESC[DSC$A_POINTER] = .FILE_NAM[NAM$L_NAME];
  3     END
  2 ELSE
  3     BEGIN
  3     FIB[FIB$W_FID_NUM] = .FILE_NAM[NAM$W_FID_NUM];
  3     FIB[FIB$W_FID_SEQ] = .FILE_NAM[NAM$W_FID_SEQ];
  3     FIB[FIB$W_FID_RVN] = .FILE_NAM[NAM$W_FID_RVN];
  2     END;
  2
P 2 STATUS = $QIOW (FUNC = IO$_ACCESS,
P 2                 CHAN = .CHANNEL,
P 2                 IOSB = IOSTS,
P 2                 P1 = FIB_DESC,
P 2                 P2 = (IF .QUAL_FLAGS[DIR_V_QUAL_FULL]
P 2                       AND NOT .DISPLAY_BLOCK[DIR_V_SQD]
P  2                              THEN FILE_DESC ELSE 0),
   2                      P5 = ATTRIBUTES);
   2  IF .STATUS THEN STATUS = .IOSTS[0];
   2  IF NOT .STATUS
   2  THEN
   3      BEGIN
   3      $DASSGN (CHAN = .CHANNEL);
   3      CHANNEL = 0;
   3      RETURN .STATUS;
   2      END;
   2
   2  ! Fix up some of the information returned.
   2
   2  IF .DISPLAY_BLOCK[DIR_V_SQD]
   2  THEN
   3      BEGIN
   3      DISPLAY_BLOCK[DIR_L_HIBLK] = ROT (.ACP_STATISTICS[SBK$L_FILESIZE], 16);
   3      DISPLAY_BLOCK[DIR_L_EFBLK] = .DISPLAY_BLOCK[DIR_L_HIBLK];
   3      END
   2  ELSE
   3      BEGIN
   3      DISPLAY_BLOCK[DIR_L_HIBLK] = ROT (.DISPLAY_BLOCK[DIR_L_HIBLK], 16);
   3      IF (DISPLAY_BLOCK[DIR_L_EFBLK] = ROT (.DISPLAY_BLOCK[DIR_L_EFBLK], 16)) EQL 0
   3      THEN DISPLAY_BLOCK[DIR_L_EFBLK] = .DISPLAY_BLOCK[DIR_L_HIBLK]
   3      ELSE IF .DISPLAY_BLOCK[DIR_W_FFBYTE] EQL 0
   3          THEN DISPLAY_BLOCK[DIR_L_EFBLK] = .DISPLAY_BLOCK[DIR_L_EFBLK] - 1;
   2      END;
   2
   2  IF .DISPLAY_BLOCK[DIR_W_RSIZE] EQL 0
   2  THEN DISPLAY_BLOCK[DIR_W_RSIZE] = .DISPLAY_BLOCK[DIR_W_MAXREC];
   2  DISPLAY_BLOCK[DIR_W_VERLIMIT] = .FIB[FIB$W_VERLIMIT];
   2
   2  ! Check for any RMS journaling information in the file's ACL.
   2
   2  IF .AI_JNLACE[ACE$B_SIZE] NEQ 0
   2  THEN
   3      BEGIN
   3      DISPLAY_BLOCK[DIR_B_AI_SIZE] = .AI_JNLACE[ACE$B_SIZE] -
   3                                      $BYTEOFFSET (ACE$T_RMSJNLNAM);
   3      CH$MOVE (.DISPLAY_BLOCK[DIR_B_AI_SIZE], AI_JNLACE[ACE$T_RMSJNLNAM],
   3                                              DISPLAY_BLOCK[DIR_T_AI_NAME]);
   2      END;
   2  IF .BI_JNLACE[ACE$B_SIZE] NEQ 0
   2  THEN
   3      BEGIN
   3      DISPLAY_BLOCK[DIR_B_BI_SIZE] = .BI_JNLACE[ACE$B_SIZE] -
   3                                      $BYTEOFFSET (ACE$T_RMSJNLNAM);
   3      CH$MOVE (.DISPLAY_BLOCK[DIR_B_BI_SIZE], BI_JNLACE[ACE$T_RMSJNLNAM],
   3                                              DISPLAY_BLOCK[DIR_T_BI_NAME]);
   2      END;
   2  IF .AT_JNLACE[ACE$B_SIZE] NEQ 0
   2  THEN
   3      BEGIN
   3      DISPLAY_BLOCK[DIR_B_AT_SIZE] = .AT_JNLACE[ACE$B_SIZE] -
   3                                      $BYTEOFFSET (ACE$T_RMSJNLNAM);
   3      CH$MOVE (.DISPLAY_BLOCK[DIR_B_AT_SIZE], AT_JNLACE[ACE$T_RMSJNLNAM],
   3                                              DISPLAY_BLOCK[DIR_T_AT_NAME]);
```

```
	END;

! Now copy the information obtained into the appropriate RMS data structures.
! This is necessary because the common qualifier package expects RMS data
! structures.  This is only done if one of the common qualifiers is given
! on the command line.

IF .QUAL_FLAGS[DIR_V_COMM_QUAL]
THEN
	BEGIN

! Fill in the FAB first.

	IF .DISPLAY_BLOCK[DIR_V_CONTIG] THEN FILE_FAB[FAB$V_CTG] = 1;
	IF .DISPLAY_BLOCK[DIR_V_CONTIGB] THEN FILE_FAB[FAB$V_CBT] = 1;
	IF .DISPLAY_BLOCK[DIR_V_READCHECK] THEN FILE_FAB[FAB$V_RCK] = 1;
	IF .DISPLAY_BLOCK[DIR_V_MARKDEL] THEN FILE_FAB[FAB$V_TMP] = 1;
	IF .DISPLAY_BLOCK[DIR_V_WRITCHECK] THEN FILE_FAB[FAB$V_WCK] = 1;

	FILE_FAB[FAB$L_ALQ] = .DISPLAY_BLOCK[DIR_L_HIBLK];
	FILE_FAB[FAB$B_BKS] = .DISPLAY_BLOCK[DIR_B_BKTSIZE];
	FILE_FAB[FAB$W_DEQ] = .DISPLAY_BLOCK[DIR_W_DEFEXT];
	FILE_FAB[FAB$B_FSZ] = .DISPLAY_BLOCK[DIR_B_VFCSIZE];
	FILE_FAB[FAB$W_GBC] = .DISPLAY_BLOCK[DIR_W_GBC];
	IF (FILE_FAB[FAB$W_MRS] = .DISPLAY_BLOCK[DIR_W_RSIZE]) EQL 0
	THEN FILE_FAB[FAB$W_MRS] = .DISPLAY_BLOCK[DIR_Q_MAXREC];
	FILE_FAB[FAB$B_ORG] = .DISPLAY_BLOCK[DIR_V_FILEORG];
	FILE_FAB[FAB$B_RAT] = .DISPLAY_BLOCK[DIR_B_RATTRIB];
	FILE_FAB[FAB$B_RFM] = .DISPLAY_BLOCK[DIR_V_RTYPE];
	FILE_FAB[FAB$L_XAB] = .FIRST_XAB;

! Now fill in the DATe XAB.

	CH$MOVE (8, DISPLAY_BLOCK[DIR_Q_BAKDATE], INFO_XABDAT[XAB$Q_BDT]);
	CH$MOVE (8, DISPLAY_BLOCK[DIR_Q_CREDATE], INFO_XABDAT[XAB$Q_CDT]);
	CH$MOVE (8, DISPLAY_BLOCK[DIR_Q_EXPDATE], INFO_XABDAT[XAB$Q_EDT]);
	CH$MOVE (8, DISPLAY_BLOCK[DIR_Q_REVDATE], INFO_XABDAT[XAB$Q_RDT]);
	INFO_XABDAT[XAB$W_RVN] = .DISPLAY_BLOCK[DIR_W_REVISION];

! Now for the File Header Characteristics XAB.

	INFO_XABFHC[XAB$B_ATR] = .FILE_FAB[FAB$B_RAT];
	INFO_XABFHC[XAB$B_BKZ] = .FILE_FAB[FAB$B_BKS];
	INFO_XABFHC[XAB$W_DXQ] = .FILE_FAB[FAB$W_DEQ];
	INFO_XABFHC[XAB$L_EBK] = .DISPLAY_BLOCK[DIR_L_EFBLK];
	INFO_XABFHC[XAB$W_FFB] = .DISPLAY_BLOCK[DIR_W_FFBYTE];
	INFO_XABFHC[XAB$W_GBC] = .FILE_FAB[FAB$W_GBC];
	INFO_XABFHC[XAB$L_HBK] = .DISPLAY_BLOCK[DIR_L_HIBLK];
	INFO_XABFHC[XAB$B_HSZ] = .FILE_FAB[FAB$B_FSZ];
	INFO_XABFHC[XAB$W_MRZ] = .FILE_FAB[FAB$W_MRS];
	INFO_XABFHC[XAB$B_RFO] = .FILE_FAB[FAB$B_ORG];
	INFO_XABFHC[XAB$L_SBN] = .ACP_STATISTICS[SBK$L_STLBN];
	INFO_XABFHC[XAB$W_VERLIMIT] = .DISPLAY_BLOCK[DIR_W_VERLIMIT];

! Now for the RMS journaling XAB.

	IF (INFO_XABJNL[XAB$B_AIL] = .DISPLAY_BLOCK[DIR_B_AI_SIZE]) GTR 0
```

```
3        THEN INFO_XABJNL[XAB$L_AIA] = DISPLAY_BLOCK[DIR_T_AI_NAME];
3        IF (INFO_XABJNL[XAB$B_BIL] = .DISPLAY_BLOCK[DIR_B_BI_SIZE]) GTR 0
3        THEN INFO_XABJNL[XAB$L_BIA] = DISPLAY_BLOCK[DIR_T_BI_NAME];
3        IF (INFO_XABJNL[XAB$B_ATL] = .DISPLAY_BLOCK[DIR_B_AT_SIZE]) GTR 0
3        THEN INFO_XABJNL[XAB$L_ATA] = DISPLAY_BLOCK[DIR_T_AT_NAME];
3
3   ! And now...The PROtection XAB.
3
3        INFO_XABPRO[XAB$W_PRO] = .DISPLAY_BLOCK[DIR_W_FILEPROT];
3        INFO_XABPRO[XAB$L_UIC] = .DISPLAY_BLOCK[DIR_L_FILEOWNER];
2        END;
2
2   ! Finally, if this is a relative or indexed file, obtain the information from
2   ! the file's prolog.
2
3   IF (.DISPLAY_BLOCK[DIR_V_FILEORG] EQL DIR_C_RELATIVE
3       OR .DISPLAY_BLOCK[DIR_V_FILEORG] EQL DIR_C_INDEXED)
2   AND .QUAL_FLAGS[DIR_V_QUAL_FULL]
2   THEN
3        BEGIN
3        LOCAL         OLD_FAB_LNK,
3                      OLD_XAB_LNK;
3        OLD_FAB_LNK = .FILE_FAB[FAB$L_XAB];
3        OLD_XAB_LNK = .INFO_XABSUM[XAB$L_NXT];
3        FILE_FAB[FAB$W_DEQ] = 0;                        ! Zero because RMS takes non-zero as input
3        FILE_FAB[FAB$L_XAB] = INFO_XABSUM;
3        INFO_XABSUM[XAB$L_NXT] = 0;
4        IF $OPEN (FAB = .FILE_FAB)
3        THEN
4            BEGIN
4            DISPLAY_BLOCK[DIR_L_MRN] = .FILE_FAB[FAB$L_MRN];
4            DISPLAY_BLOCK[DIR_B_NOKEYS] = .INFO_XABSUM[XAB$B_NOK];
4            DISPLAY_BLOCK[DIR_W_PVN] = .INFO_XABSUM[XAB$W_PVN];
4            DISPLAY_BLOCK[DIR_B_NOAREAS] = .INFO_XABSUM[XAB$B_NOA];
4            $CLOSE (FAB = .FILE_FAB);
3            END;
3        FILE_FAB[FAB$L_XAB] = .OLD_FAB_LNK;
3        INFO_XABSUM[XAB$L_NXT] = .OLD_XAB_LNK;
2        END;
2
2   RETURN .STATUS;
2
1   END;                                                 ! End of routine DIR$ACP_FILL


                                                          .EXTRN  SYS$DASSGN, SYS$ASSIGN
                                                          .EXTRN  SYS$QIOW, SYS$OPEN
                                                          .EXTRN  SYS$CLOSE

                                     OFFC 00000 DIR$ACP_FILL:
                                                          .WORD   Save R2,R3,R4,R5,R6,R7,R8,R9,R10,R11        ; 0916
                     5E      FBE0    CE  9E 00002         MOVAB   -1056(SP), SP                               ;
                     56        08    AC  D0 00007         MOVL    FILE_NAM, R6                                ; 0975
00000000'  EF    14  A6              10  29 0000B         CMPC3   #16, 20(R6), DEVICE_NAME                    ;
                                     08  12 00014         BNEQ    1$                                          ;
                          00000000'  EF  D5 00016         TSTL    CHANNEL                                     ; 0976
```

```
                                                            57   12 0001C             BNEQ    3$
                                            50  00000000'   EF   D0 0001E 1$:         MOVL    CHANNEL, R0                     : 0979
                                                            09   13 00025             BEQL    2$
                                                            50   DD 00027             PUSHL   R0
                                 00000000G  00              01   FB 00029             CALLS   #1, SYS$DASSGN
                 00000000'   EF          14  A6              10   28 00030 2$:         MOVC3   #16, 20(R6), DEVICE_NAME        : 0980
           08                00              6E              00   2C 00039             MOVC5   #0, (SP), #0, #8, DEVICE_DESC   : 0981
                                                     F8     AD      0003E
                                         F8  AD  00000000'   EF   9B 00040             MOVZBW  DEVICE_NAME, DEVICE_DESC        : 0982
                                         FC  AD  00000000'   EF   9E 00048             MOVAB   DEVICE_NAME+1, DEVICE_DESC+4    : 0983
                                                            7E   7C 00050             CLRQ    -(SP)                           : 0985
                                                 00000000'   EF   9F 00052             PUSHAB  CHANNEL
                                                     F8     AD   9F 00058             PUSHAB  DEVICE_DESC
                                 00000000G  00              04   FB 0005B             CALLS   #4, SYS$ASSIGN
                                            5B              50   D0 00062             MOVL    R0, STATUS
                                            0D              5B   E8 00065             BLBS    STATUS, 3$                      : 0986
           10                00              6E              00   2C 00068             MOVC5   #0, (SP), #0, #16, DEVICE_NAME  : 0989
                                                 00000000'   EF      0006D
                                                          01C4   31 00072             BRW     9$                              : 0990
    00A0   8F                00              6E              00   2C 00075 3$:         MOVC5   #0, (SP), #0, #160, ATTRIBUTES  : 0997
                                                   FF08     CD      0007C
                                       FF08  CD   00040020    8F   D0 0007F             MOVL    #262176, ATTRIBUTES             : 0999
                                            57  00000000'   EF   D0 00088             MOVL    DISPLAY_BLOCK, R7               : 1000
                                       FF0C  CD       0129    C7   9E 0008F             MOVAB   297(R7), ATTRIBUTES+4
                                       FF10  CD   00110008    8F   D0 00096             MOVL    #1114120, ATTRIBUTES+8          : 1002
                                       FF14  CD       0170    C7   9E 0009F             MOVAB   368(R7), ATTRIBUTES+12          : 1003
                                       FF18  CD   00120008    8F   D0 000A6             MOVL    #1179656, ATTRIBUTES+16         : 1005
                                       FF1C  CD       0178    C7   9E 000AF             MOVAB   376(R7), ATTRIBUTES+20          : 1006
                                       FF20  CD   00130008    8F   D0 000B6             MOVL    #1245192, ATTRIBUTES+24         : 1008
                                       FF24  CD       0180    C7   9E 000BF             MOVAB   384(R7), ATTRIBUTES+28          : 1009
                                       FF28  CD   00140008    8F   D0 000C6             MOVL    #1310728, ATTRIBUTES+32         : 1011
                                       FF2C  CD       0188    C7   9E 000CF             MOVAB   392(R7), ATTRIBUTES+36          : 1012
                                       FF30  CD   00090020    8F   D0 000D6             MOVL    #589856, ATTRIBUTES+40          : 1014
                                       FF34  CD       FEE8    CD   9E 000DF             MOVAB   ACP_STATISTICS, ATTRIBUTES+44   : 1015
                                       FF38  CD   00150004    8F   D0 000E6             MOVL    #1376260, ATTRIBUTES+48         : 1017
                                       FF3C  CD       014E    C7   9E 000EF             MOVAB   334(R7), ATTRIBUTES+52          : 1018
                                       FF40  CD   00160002    8F   D0 000F6             MOVL    #1441794, ATTRIBUTES+56         : 1020
                                       FF44  CD       0152    C7   9E 000FF             MOVAB   338(R7), ATTRIBUTES+60          : 1021
                                       FF48  CD   00030004    8F   D0 00106             MOVL    #196612, ATTRIBUTES+64          : 1023
                                       FF4C  CD       0149    C7   9E 0010F             MOVAB   329(R7), ATTRIBUTES+68          : 1024
                                       FF50  CD   000D0002    8F   D0 00116             MOVL    #851970, ATTRIBUTES+72          : 1026
                                       FF54  CD       016E    C7   9E 0011F             MOVAB   366(R7), ATTRIBUTES+76          : 1027
                                       FF58  CD   001D0002    8F   D0 00126             MOVL    #1900546, ATTRIBUTES+80         : 1029
                                       FF5C  CD       0154    C7   9E 0012F             MOVAB   340(R7), ATTRIBUTES+84          : 1030
                                       FF60  CD   002300FF    8F   D0 00136             MOVL    #2294015, ATTRIBUTES+88         : 1032
                                       FF64  CD       0208    CE   9E 0013F             MOVAB   AI_JNLACE, ATTRIBUTES+92        : 1033
                                       FF68  CD   002300FF    8F   D0 00146             MOVL    #2294015, ATTRIBUTES+96         : 1035
                                       FF6C  CD       0108    CE   9E 0014F             MOVAB   BI_JNLACE, ATTRIBUTES+100       : 1036
                                       FF70  CD   002300FF    8F   D0 00156             MOVL    #2294015, ATTRIBUTES+104        : 1038
                                       FF74  CD         08    AE   9E 0015F             MOVAB   AT_JNLACE, ATTRIBUTES+108       : 1039
                                       FF78  CD   00260004    8F   D0 00165             MOVL    #2490372, ATTRIBUTES+112        : 1041
                                       FF7C  CD  00000000'   EF   9E 0016E             MOVAB   ACL_LENGTH, ATTRIBUTES+116      : 1042
                                       0208  CE       0300    8F   B0 00177             MOVW    #768, AI_JNLACE                 : 1047
                                       0108  CE       0200    8F   B0 0017E             MOVW    #512, BI_JNLACE                 : 1049
                                         08  AE       0400    8F   B0 00185             MOVW    #1024, AT_JNLACE                : 1051
    0040   8F                00              6E              00   2C 0018B             MOVC5   #0, (SP), #0, #64, FIB          : 1056
                                                     A8     AD      00192
```

```
        08          00             6E            00  2C 00194        MOVC5   #0, (SP), #0, #8, FIB_DESC                        : 1057
                                              E8 AD     00199                                                                    :
                              E8   AD         40 8F  9B 0019B        MOVZBW  #64, FIB_DESC                                     : 1058
                              EC   AD         A8 AD  9E 001A0        MOVAB   FIB, FIB_DESC+4                                   : 1059
                    31 00000000'   EF            01  E1 001A5        BBC     #1, QUAL_FLAGS+1, 4$                              : 1061
                    2C        04   A7            01  E0 001AD        BBS     #1, 4(R7), 4$                                     : 1062
                              B2   AD         2A A6  D0 001B2        MOVL    42(R6), FIB+10                                    : 1065
                              B6   AD         2E A6  B0 001B7        MOVW    46(R6), FIB+14                                    : 1067
        08          00             6E            00  2C 001BC        MOVC5   #0, (SP), #0, #8, FILE_DESC                       : 1068
                                              F0 AD     001C1                                                                    :
                                   50         3B A6  9A 001C3        MOVZBL  59(R6), R0                                        : 1070
                                   51         3C A6  9A 001C7        MOVZBL  60(R6), R1                                        :
                                   50            51  C0 001CB        ADDL2   R1, R0                                            :
                                   52         3D A6  9A 001CE        MOVZBL  61(R6), R2                                        : 1071
               F0   AD             50            52  A1 001D2        ADDW3   R2, R0, FILE_DESC                                 :
                              F4   AD         4C A6  D0 001D7        MOVL    76(R6), FILE_DESC+4                               : 1072
                                                 0A  11 001DC        BRB     5$                                                : 1061
                              AC   AD         24 A6  D0 001DE 4$:    MOVL    36(R6), FIB+4                                     : 1076
                              B0   AD         28 A6  B0 001E3        MOVW    40(R6), FIB+8                                     : 1078
                                                 7E  D4 001E8 5$:    CLRL    -(SP)                                             : 1088
                                            FF08 CD  9F 001EA        PUSHAB  ATTRIBUTES                                        :
                                                 7E  7C 001EE        CLRQ    -(SP)                                             :
                    0D 00000000'   EF            01  E1 001F0        BBC     #1, QUAL_FLAGS+1, 6$                              :
                    08        04   A7            01  E0 001F8        BBS     #1, 4(R7), 6$                                     :
                                   50         F0 AD  9E 001FD        MOVAB   FILE_DESC, R0                                     :
                                                 50  DD 00201        PUSHL   R0                                                :
                                                 02  11 00203        BRB     7$                                                :
                                                 7E  D4 00205 6$:    CLRL    -(SP)                                             :
                                              E8 AD  9F 00207 7$:    PUSHAB  FIB_DESC                                          :
                                                 7E  7C 0020A        CLRQ    -(SP)                                             :
                                              20 AE  9F 0020C        PUSHAB  IOSTS                                             :
                                                 32  DD 0020F        PUSHL   #50                                               :
                                       00000000' EF  DD 00211        PUSHL   CHANNEL                                           :
                                                 7E  D4 00217        CLRL    -(SP)                                             :
                       00000000G   00            0C  FB 00219        CALLS   #12, SYS$QIOW                                     :
                                   5B            50  D0 00220        MOVL    R0, STATUS                                        :
                                   06            5B  E9 00223        BLBC    STATUS, 8$                                        : 1089
                                   5B            6E  3C 00226        MOVZWL  IOSTS, STATUS                                     :
                                   16            5B  E8 00229        BLBS    STATUS, 10$                                       : 1090
                                       00000000' EF  DD 0022C 8$:    PUSHL   CHANNEL                                           : 1093
                       00000000G   00            01  FB 00232        CALLS   #1, SYS$DASSGN                                    :
                                       00000000' EF  D4 00239 9$:    CLRL    CHANNEL                                           : 1094
                                             027B    31 0023F        BRW     32$                                               : 1095
                                   56  00000000' EF  D0 00242 10$:   MOVL    DISPLAY_BLOCK, R6                                 : 1100
                                   59       012D C6  9E 00249        MOVAB   301(R6), R9                                       : 1103
                                   58       0131 C6  9E 0024E        MOVAB   305(R6), R8                                       : 1104
                    08        04   A6            01  E1 00253        BBC     #1, 4(R6), 11$                                    : 1100
                    69      FEEC   CD            10  9C 00258        ROTL    #16, ACP_STATISTICS+4, (R9)                       : 1103
                                                 0A  11 0025E        BRB     12$                                               : 1104
                    69             69            10  9C 00260 11$:   ROTL    #16, (R9), (R9)                                   : 1108
                    68             68            10  9C 00264        ROTL    #16, (R8), (R8)                                   : 1109
                                                 05  12 00268        BNEQ    13$                                               :
                                   68            69  D0 0026A 12$:   MOVL    (R9), (R8)                                        : 1110
                                                 08  11 0026D        BRB     14$                                               :
                                            0135 C6  B5 0026F 13$:   TSTW    309(R6)                                           : 1111
                                                 02  12 00273        BNEQ    14$                                               :
                                                 68  D7 00275        DECL    (R8)                                              : 1112
```

```
                               5A      012B  C6 9E 00277 14$:   MOVAB    299(R6), R10                         ; 1115
                                             6A B5 0027C        TSTW     (R10)                                ;
                                             05 12 0027E        BNEQ     15$                                  ;
                               6A      0139  C6 B0 00280        MOVW     313(R6), (R10)                       ; 1116
                         011D  C6        D4  AD B0 00285 15$:   MOVW     FIB+44, 285(R6)                      ; 1117
                               50      0208  CE 9A 0028B        MOVZBL   AI_JNLACE, R0                        ; 1121
                                             13 13 00290        BEQL     16$                                  ;
          0198  C6             50            04 83 00292        SUBB3    #4, R0, 408(R6)                      ; 1124
                               50      0198  C6 9A 00298        MOVZBL   408(R6), R0                          ; 1126
          0199  C6       020C  CE            50 28 0029D        MOVC3    R0, AI_JNLACE+4, 409(R6)             ; 1127
                               50      0108  CE 9A 002A5 16$:   MOVZBL   BI_JNLACE, R0                        ; 1129
                                             13 13 002AA        BEQL     17$                                  ;
          01A9  C6             50            04 83 002AC        SUBB3    #4, R0, 425(R6)                      ; 1132
                               50      01A9  C6 9A 002B2        MOVZBL   425(R6), R0                          ; 1134
          01AA  C6       010C  CE            50 28 002B7        MOVC3    R0, BI_JNLACE+4, 426(R6)             ; 1135
                                         08  AE 95 002BF 17$:   TSTB     AT_JNLACE                            ; 1137
                                             13 13 002C2        BEQL     18$                                  ;
          01BA  C6         08  AE            04 83 002C4        SUBB3    #4, AT_JNLACE, 442(R6)               ; 1140
                               50      01BA  C6 9A 002CB        MOVZBL   442(R6), R0                          ; 1142
          01BB  C6         0C  AE            50 28 002D0        MOVC3    R0, AT_JNLACE+4, 443(R6)             ; 1143
                03  00000000'  EF            06 E0 002D7 18$:   BBS      #6, QUAL_FLAGS+3, 19$                ; 1151
                                           016B 31 002DF        BRW      29$                                  ;
                               51      0149  C6 9E 002E2 19$:   MOVAB    329(R6), R1                          ; 1157
                                             61 95 002E7        TSTB     (R1)                                 ;
                                             08 18 002E9        BGEQ     20$                                  ;
                               50        04  AC D0 002EB        MOVL     FILE_FAB, R0                         ;
                           06  A0            10 88 002EF        BISB2    #16, 6(R0)                           ;
                08             61            05 E1 002F3 20$:   BBC      #5, (R1), 21$                        ; 1158
                               50        04  AC D0 002F7        MOVL     FILE_FAB, R0                         ;
                           06  A0            20 88 002FB        BISB2    #32, 6(R0)                           ;
                09             61            03 E1 002FF 21$:   BBC      #3, (R1), 22$                        ; 1159
                               50        04  AC D0 00303        MOVL     FILE_FAB, R0                         ;
                           06  A0        80  8F 88 00307        BISB2    #128, 6(R0)                          ;
                                             61 B5 0030C 22$:   TSTW     (R1)                                 ; 1160
                                             08 18 0030E        BGEQ     23$                                  ;
                               50        04  AC D0 00310        MOVL     FILE_FAB, R0                         ;
                           04  A0            08 88 00314        BISB2    #8, 4(R0)                            ;
                08             61            04 E1 00318 23$:   BBC      #4, (R1), 24$                        ; 1161
                               50        04  AC D0 0031C        MOVL     FILE_FAB, R0                         ;
                           05  A0            02 88 00320        BISB2    #2, 5(R0)                            ;
                               57        04  AC D0 00324 24$:   MOVL     FILE_FAB, R7                         ; 1163
                           10  A7            69 D0 00328        MOVL     (R9), 16(R7)                         ;
                           14  A7      013B  C6 B0 0032C        MOVW     315(R6), 20(R7)                      ; 1165
                           3E  A7      0137  C6 B0 00332        MOVW     311(R6), 62(R7)                      ; 1164
                           48  A7      013D  C6 B0 00338        MOVW     317(R6), 72(R7)                      ; 1167
                           36  A7            6A B0 0033E        MOVW     (R10), 54(R7)                        ; 1168
                                             06 12 00342        BNEQ     25$                                  ;
                           36  A7      0139  C6 B0 00344        MOVW     313(R6), 54(R7)                      ; 1169
50        0129  C6             04            04 EF 0034A 25$:   EXTZV    #4, #4, 297(R6), R0                  ; 1170
                           1D  A7            50 90 00351        MOVB     R0, 29(R7)                           ;
                           1E  A7      012A  C6 90 00355        MOVB     298(R6), 30(R7)                      ; 1171
50        0129  C6             04            00 EF 0035B        EXTZV    #0, #4, 297(R6), R0                  ; 1172
                           1F  A7            50 90 00362        MOVB     R0, 31(R7)                           ;
                           24  A7 00000000'  EF D0 00366        MOVL     FIRST_XAB, 36(R7)                    ; 1173
     00000000'  EF       0188  C6            08 28 0036E        MOVC3    #8, 392(R6), INFO_XABDAT+36          ; 1177
     00000000'  EF       0170  C6            08 28 00378        MOVC3    #8, 368(R6), INFO_XABDAT+20          ; 1178
     00000000'  EF       0180  C6            08 28 00382        MOVC3    #8, 384(R6), INFO_XABDAT+28          ; 1179
```

```
            00000000'  EF      0178   C6      08  28 0038C          MOVC3   #8, 376(R6), INFO_XABDAT+12             ; 1180
                  00000000'  EF    016E  C6      B0 00396          MOVW    366(R6), INFO_XABDAT+8                  ; 1181
                  00000000'  EF      1D  A7      B0 0039F          MOVW    29(R7), INFO_XABFHC+8                   ; 1194
                  00000000'  EF      14  A7      B0 003A7          MOVW    20(R7), INFO_XABFHC+26                  ; 1187
                  00000000'  EF          68      D0 003AF          MOVL    (R8), INFO_XABFHC+16                    ; 1188
                  00000000'  EF    0135  C6      B0 003B6          MOVW    309(R6), INFO_XABFHC+20                 ; 1189
                  00000000'  EF      48  A7      B0 003BF          MOVW    72(R7), INFO_XABFHC+28                  ; 1190
                  00000000'  EF          69      D0 003C7          MOVL    (R9), INFO_XABFHC+12                    ; 1191
                  00000000'  EF      3E  A7      B0 003CE          MOVW    62(R7), INFO_XABFHC+22                  ; 1186
                  00000000'  EF      36  A7      B0 003D6          MOVW    54(R7), INFO_XABFHC+24                  ; 1193
                  00000000'  EF    FEE8  CD      D0 003DE          MOVL    ACP_STATISTICS, INFO_XABFHC+40          ; 1195
                  00000000'  EF    011D  C6      B0 003E7          MOVW    285(R6), INFO_XABFHC+38                 ; 1196
                             50    0198  C6      9A 003F0          MOVZBL  408(R6), R0                             ; 1200
                  00000000'  EF          50      90 003F5          MOVB    R0, INFO_XABJNL+21                      ;
                                         50      D5 003FC          TSTL    R0                                      ;
                                         09      15 003FE          BLEQ    26$                                     ;
                  00000000'  EF    0199  C6      9E 00400          MOVAB   409(R6), INFO_XABJNL+24                 ; 1201
                             50    01A9  C6      9A 00409  26$:    MOVZBL  425(R6), R0                             ; 1202
                  00000000'  EF          50      90 0040E          MOVB    R0, INFO_XABJNL+13                      ;
                                         50      D5 00415          TSTL    R0                                      ;
                                         09      15 00417          BLEQ    27$                                     ;
                  00000000'  EF    01AA  C6      9E 00419          MOVAB   426(R6), INFO_XABJNL+16                 ; 1203
                             50    01BA  C6      9A 00422  27$:    MOVZBL  442(R6), R0                             ; 1204
                  00000000'  EF          50      90 00427          MOVB    R0, INFO_XABJNL+29                      ;
                                         50      D5 0042E          TSTL    R0                                      ;
                                         09      15 00430          BLEQ    28$                                     ;
                  00000000'  EF    01BB  C6      9E 00432          MOVAB   443(R6), INFO_XABJNL+32                 ; 1205
                  00000000'  EF    0152  C6      B0 0043B  28$:    MOVW    338(R6), INFO_XABPRO+8                  ; 1209
                  00000000'  EF    014E  C6      D0 00444          MOVL    334(R6), INFO_XABPRO+12                 ; 1210
      01      0129     C6            04          04      ED 0044D  29$:    CMPZV   #4, #4, 297(R6), #1                     ; 1216
                                         09      13 00454          BEQL    30$                                     ;
      02      0129     C6            04          04      ED 00456          CMPZV   #4, #4, 297(R6), #2                     ; 1217
                                         5E      12 0045D          BNEQ    32$                                     ;
               56 00000000'  EF          01      E1 0045F  30$:    BBC     #1, QUAL_FLAGS+1, 32$                   ; 1218
                             52      04  AC      D0 00467          MOVL    FILE_FAB, R2                            ; 1223
                             54      24  A2      D0 0046B          MOVL    36(R2), OLD_FAB_LNK                     ;
                             53 00000000'  EF    D0 0046F          MOVL    INFO_XABSUM+4, OLD_XAB_LNK              ; 1224
                                     14  A2      B4 00476          CLRW    20(R2)                                  ; 1225
                        24   A2 00000000'  EF    9E 00479          MOVAB   INFO_XABSUM, 36(R2)                     ; 1226
                                00000000'  EF    D4 00481          CLRL    INFO_XABSUM+4                           ; 1227
                                         52      DD 00487          PUSHL   R2                                      ; 1228
                  00000000G  00          01      FB 00489          CALLS   #1, SYS$OPEN                            ;
                             1F          50      E9 00490          BLBC    R0, 31$                                 ;
                             50 00000000'  EF    D0 00493          MOVL    DISPLAY_BLOCK, R0                       ; 1231
                      0190   C0      38  A2      D0 0049A          MOVL    56(R2), 400(R0)                         ;
                      0194   C0 00000000'  EF    D0 004A0          MOVL    INFO_XABSUM+8, 404(R0)                  ; 1234
                                         52      DD 004A9          PUSHL   R2                                      ; 1235
                  00000000G  00          01      FB 004AB          CALLS   #1, SYS$CLOSE                           ;
                         24  A2          54      D0 004B2  31$:    MOVL    OLD_FAB_LNK, 36(R2)                     ; 1237
                  00000000'  EF          53      D0 004B6          MOVL    OLD_XAB_LNK, INFO_XABSUM+4              ; 1238
                             50          5B      D0 004BD  32$:    MOVL    STATUS, R0                              ; 1241
                                                 04 004C0          RET                                             ; 1243

; Routine Size:  1217 bytes,    Routine Base:  $CODE$ + 0285
```

```
1 ROUTINE DIR$SHOW_INFO =
1
1 !++
1 !
1 ! FUNCTIONAL DESCRIPTION:
1 !       Display gathered information
1 !
1 ! CALLING SEQUENCE:
1 !       DIR$SHOW_INFO ()
1 !
1 ! INPUT PARAMETERS:
1 !       none
1 !
1 ! IMPLICIT INPUTS:
1 !       none
1 ! OUTPUT PARAMETERS:
1 !       none
1 !
1 ! IMPLICIT OUTPUTS:
1 !       none
1 !
1 ! ROUTINE VALUE:
1 !       1
1 !
1 ! SIDE EFFECTS:
1 !       none
1 !
1 !--
1
2 BEGIN
2
2 LOCAL
2       HEADER_LEN,                                     ! Length of file prefix
2       FILENAME_LEN,                                   ! Length of the file name
2       NAME_LEN,                                       ! File name length minus version
2       SPACE_COUNT,                                    ! Number of spaces to pad
2       LOCAL_DESC      : $BBLOCK [DSC$C_S_BLN],        ! Local text descriptor
2       MARK_POSITION,                                  ! Saved line position
2       COLUMN_BEGIN;                                   ! Beginning positinn of column
2
2 EXTERNAL ROUTINE
2       DIR$OUTPUT;                                     ! General output routine
2
2 ! See if it is necessary and time to do the header & trailer information.
2
2 HEADER_LEN = .DISPLAY_BLOCK[DIR_B_NODE] +
2              .DISPLAY_BLOCK[DIR_B_DEV] +
2              .DISPLAY_BLOCK[DIR_B_DIR];
2 FILENAME_LEN = .DISPLAY_BLOCK[DIR_B_FNS] - .HEADER_LEN;
2 NAME_LEN = .DISPLAY_BLOCK[DIR_B_FNS] - .DISPLAY_BLOCK[DIR_B_VER];
2
2 IF CH$NEQ (.PREV_DIR_LEN, PREV_DIR, .HEADER_LEN, DISPLAY_BLOCK[DIR_T_FILENAME])
2 THEN
3     BEGIN
3     IF .LINE_DESC[DSC$W_LENGTH] GTR 0
3     THEN
4         BEGIN
```

```
  4             DIR$OUTPUT (0, LINE_DESC);
  4             COLUMN_INDEX = 0
  3             END;
  3         IF .PREV_DIR_LEN NEQ 0 THEN DIR$TOTAL ();
  3         PREV_DIR_LEN = .HEADER_LEN;
  3         CH$MOVE (.HEADER_LEN, DISPLAY_BLOCK[DIR_T_FILENAME], PREV_DIR);
  3         IF .QUAL_FLAGS[DIR_V_QUAL_HEAD]
  3         AND NOT .QUAL_FLAGS[DIR_V_QUAL_GRAN]
  3         THEN
  4             BEGIN
  4             WRITE (0, '');
  4             WRITE (DIR$_NEWDIRECT, 0, .PREV_DIR_LEN, PREV_DIR);
  4             IF NOT .QUAL_FLAGS[DIR_V_QUAL_TOTL] THEN WRITE (0, '');
  3             END;
  2         END;
  2
  2     ! Check for another version of the same file.
  2
  2     IF .VERSION_COUNT GTR 0
  2     THEN
  3         BEGIN
  3         IF CH$EQL (.PREV_FILE_LEN, PREV_FILE,
  3                 .NAME_LEN, DISPLAY_BLOCK[DIR_T_FILENAME], 0)
  3         THEN VERSION_INDEX = .VERSION_INDEX + 1
  3         ELSE
  4             BEGIN
  4             PREV_FILE_LEN = .NAME_LEN;
  4             CH$MOVE (.NAME_LEN, DISPLAY_BLOCK[DIR_T_FILENAME], PREV_FILE);
  4             VERSION_INDEX = 0;
  3             END;
  3         IF .VERSION_INDEX GEQ .VERSION_COUNT THEN RETURN 1;
  2         END;
  2
  2     ! Update the running totals.
  2
  2     TOTAL_USED = .TOTAL_USED + .DISPLAY_BLOCK[DIR_L_EFBLK];
  2     TOTAL_ALLOC = .TOTAL_ALLOC + .DISPLAY_BLOCK[DIR_L_HIBLK];
  2     TOTAL_FILES = .TOTAL_FILES + 1;
  2
  2     IF .QUAL_FLAGS[DIR_V_QUAL_TOTL] OR .QUAL_FLAGS[DIR_V_QUAL_GRAN] THEN RETURN 1;
  2
  2     ! Build the line using the requested informatation.
  2
  2     IF .COLUMN_INDEX GEQ .COLUMN_COUNT
  2     THEN
  3         BEGIN
  3         IF .LINE_DESC[DSC$W_LENGTH] GTR 0 THEN DIR$OUTPUT (0, LINE_DESC);
  3         COLUMN_INDEX = 0;
  2         END;
  2     COLUMN_BEGIN = MARK_POSITION = .LINE_DESC[DSC$W_LENGTH];
  2
  2     IF NOT .QUAL_FLAGS[DIR_V_QUAL_HEAD]
  2     THEN APPEND (0, '!AD', .HEADER_LEN, DISPLAY_BLOCK[DIR_T_FILENAME]);
P 2     APPEND (0, '!AD', .FILENAME_LEN, VECTOR [DISPLAY_BLOCK[DIR_T_FILENAME],
  3                                             .HEADER_LEN; ,BYTE]);
  2     IF .LINE_DESC[DSC$W_LENGTH] GEQ .DISPLAY_WIDTH
  2     THEN
  3          BEGIN
  3          LINE_DESC[DSC$W_LENGTH] = .MARK_POSITION;
  3          DIR$OUTPUT (0, LINE_DESC);
  3          COLUMN_BEGIN = MARK_POSITION = 0;
  3          COLUMN_INDEX = 0;
  3          IF NOT .QUAL_FLAGS[DIR_V_QUAL_HEAD]
  3          THEN APPEND (0, '!AD', .HEADER_LEN, DISPLAY_BLOCK[DIR_T_FILENAME]);
P 3          APPEND (0, '!AD', .FILENAME_LEN, VECTOR [DISPLAY_BLOCK[DIR_T_FILENAME],
  3                                                     .HEADER_LEN; ,BYTE]);
  2          END;
  2
  2      SPACE_COUNT = .FILENAME_WIDTH - .LINE_DESC[DSC$W_LENGTH] +
  2                                      .MARK_POSITION;
  2      IF .SPACE_COUNT LEQ 0
  2      THEN
  3          BEGIN
  3          IF .COLUMN_COUNT EQL 1
  3          THEN
  4              BEGIN
  4              DIR$OUTPUT (0, LINE_DESC);
  4              COLUMN_BEGIN = 0;
  4              IF .QUAL_FLAGS[DIR_V_QUAL_FID] OR .QUAL_FLAGS[DIR_V_QUAL_SIZE]
  4              OR .QUAL_FLAGS[DIR_V_QUAL_DATE] OR .QUAL_FLAGS[DIR_V_QUAL_OWNE]
  4              OR .QUAL_FLAGS[DIR_V_QUAL_PROT]
  4              THEN APPEND (0, '!#* ', .FILENAME_WIDTH);
  4              END
  3          ELSE
  4              BEGIN
  4              IF .QUAL_FLAGS[DIR_V_QUAL_BRIE]
  4              AND NOT .QUAL_FLAGS[DIR_V_QUAL_SIZE]
  4              AND NOT .QUAL_FLAGS[DIR_V_QUAL_DATE]
  4              AND NOT .QUAL_FLAGS[DIR_V_QUAL_OWNE]
  4              AND NOT .QUAL_FLAGS[DIR_V_QUAL_PROT]
  4              AND NOT .QUAL_FLAGS[DIR_V_QUAL_FID]
  4              THEN
  5                  BEGIN
  5                  COLUMN_INDEX = .COLUMN_INDEX +
  6                                 ((.LINE_DESC[DSC$W_LENGTH] - .COLUMN_BEGIN) /
  5                                 .COLUMN_WIDTH);
  5                  COLUMN_BEGIN = .COLUMN_BEGIN +
  6                                 ((.LINE_DESC[DSC$W_LENGTH] - .COLUMN_BEGIN) /
  5                                 .COLUMN_WIDTH) * .COLUMN_WIDTH;
  5                  END
  4              ELSE
  5                  BEGIN
  5                  LINE_DESC[DSC$W_LENGTH] = .MARK_POSITION + .FILENAME_WIDTH;
  5                  LINE_BUFFER[.LINE_DESC[DSC$W_LENGTH] - 1] = '!'
  4                  END;
  3              END;
  3          END
  2      ELSE APPEND (0, '!#* ', .SPACE_COUNT);
  2
  2      ! Check to see if an error occurred opening the file.
  2
  2      IF NOT .DISPLAY_BLOCK[DIR_L_STATUS]
  2      THEN
  3          BEGIN
```

```
; 1019          1415 3          CH$FILL (0, DSC$C_S_BLN, LOCAL_DESC);
; 1020          1416 3          LOCAL_DESC[DSC$W_LENGTH] = 1024 - .LINE_DESC[DSC$W_LENGTH];
; 1021          1417 3          LOCAL_DESC[DSC$A_POINTER] = LINE_BUFFER[.LINE_DESC[DSC$W_LENGTH]];
; 1022        P 1418 3          $GETMSG (MSGID = .DISPLAY_BLOCK[DIR_L_STATUS],
; 1023        P 1419 3                   MSGLEN = LOCAL_DESC,
; 1024        P 1420 3                   BUFADR = LOCAL_DESC,
; 1025          1421 3                   FLAGS = 1);
; 1026          1422 3          LINE_DESC[DSC$W_LENGTH] = .LINE_DESC[DSC$W_LENGTH] + .LOCAL_DESC[DSC$W_LENGTH];
; 1027          1423 3          IF .LINE_DESC[DSC$W_LENGTH] GTR .DISPLAY_WIDTH
; 1028          1424 3          THEN
; 1029          1425 4              BEGIN
; 1030          1426 4              LINE_DESC[DSC$W_LENGTH] = .MARK_POSITION;
; 1031          1427 4              IF .LINE_DESC[DSC$W_LENGTH] GTR 0 THEN DIR$OUTPUT (0, LINE_DESC);
; 1032          1428 4              LINE_DESC[DSC$W_LENGTH] = .LOCAL_DESC[DSC$A_POINTER] +
; 1033          1429 4                                        .LOCAL_DESC[DSC$W_LENGTH] -
; 1034          1430 4                                        LINE_BUFFER[.MARK_POSITION];
; 1035          1431 4              CH$MOVE (.LINE_DESC[DSC$W_LENGTH], LINE_BUFFER[.MARK_POSITION],
; 1036          1432 4                                                   LINE_BUFFER);
; 1037          1433 3              END;
; 1038          1434 3          DIR$OUTPUT (0, LINE_DESC);
; 1039          1435 3          COLUMN_INDEX = 0;
; 1040          1436 3          RETURN 1;
; 1041          1437 2          END;
; 1042          1438 2
; 1043          1439 2      ! No errors were encountered.  Fill the line with the requested information.
; 1044          1440 2
; 1045          1441 2      IF .QUAL_FLAGS[DIR_V_QUAL_FID]
; 1046          1442 2      THEN
; 1047          1443 3          BEGIN
; 1048          1444 3          IF .DISPLAY_BLOCK[DIR_W_FID_NUM] NEQ 0
; 1049          1445 3          OR .DISPLAY_BLOCK[DIR_W_FID_SEQ] NEQ 0
; 1050          1446 3          OR .DISPLAY_BLOCK[DIR_W_FID_RVN] NEQ 0
; 1051        P 1447 3          THEN APPEND (0, '  !19<(!UW,!UW,!UW)!>', .DISPLAY_BLOCK[DIR_W_FID_NUM],
; 1052        P 1448 3                                                   .DISPLAY_BLOCK[DIR_W_FID_SEQ],
; 1053          1449 3                                                   .DISPLAY_BLOCK[DIR_W_FID_RVN])
; 1054          1450 3          ELSE APPEND (DIR$_NOBRFILEID);
; 1055          1451 2          END;
; 1056          1452 2
; 1057          1453 2      IF .QUAL_FLAGS[DIR_V_QUAL_SIZE]
; 1058          1454 2      THEN
; 1059          1455 3          BEGIN
; 1060          1456 3          IF .QUAL_FLAGS[DIR_V_SIZE_ALL]
; 1061        P 1457 3          THEN APPEND (0, '  !#UL/!#<!UL!>', .SIZE_WIDTH,
; 1062        P 1458 3                                             .DISPLAY_BLOCK[DIR_L_EFBLK],
; 1063        P 1459 3                                             .SIZE_WIDTH,
; 1064          1460 3                                             .DISPLAY_BLOCK[DIR_L_HIBLK])
; 1065        P 1461 3          ELSE APPEND (0, '  !#UL', .SIZE_WIDTH,
; 1066        P 1462 3                                  (IF .QUAL_FLAGS[DIR_V_SIZE_USED]
; 1067        P 1463 3                                  THEN .DISPLAY_BLOCK[DIR_L_EFBLK]
; 1068          1464 3                                  ELSE .DISPLAY_BLOCK[DIR_L_HIBLK]));
; 1069          1465 2          END;
; 1070          1466 2
; 1071          1467 2      IF .QUAL_FLAGS[DIR_V_QUAL_DATE]
; 1072          1468 2      THEN
; 1073          1469 3          BEGIN
; 1074          1470 3          IF .QUAL_FLAGS[DIR_V_DATE_CRE]
; 1075          1471 3          THEN IF .DISPLAY_BLOCK[DIR_L_CDT0] EQL 0 AND .DISPLAY_BLOCK[DIR_L_CDT4] EQL 0
```

```
3               THEN APPEND (DIR$_NOBRCREDAT)
3               ELSE APPEND (0, '  !17%D', DISPLAY_BLOCK[DIR_L_CDTO]);
3           IF .QUAL_FLAGS[DIR_V_DATE_MOD]
3           THEN IF .DISPLAY_BLOCK[DIR_L_RDTO] EQL 0 AND .DISPLAY_BLOCK[DIR_L_RDT4] EQL 0
3               THEN APPEND (DIR$_NOBRREVDAT)
3               ELSE APPEND (0, '  !17%D', DISPLAY_BLOCK[DIR_L_RDTO]);
3           IF .QUAL_FLAGS[DIR_V_DATE_EXP]
3           THEN IF .DISPLAY_BLOCK[DIR_L_EDTO] EQL 0 AND .DISPLAY_BLOCK[DIR_L_EDT4] EQL 0
3               THEN APPEND (DIR$_NOBREXPDAT)
3               ELSE APPEND (0, '  !17%D', DISPLAY_BLOCK[DIR_L_EDTO]);
3           IF .QUAL_FLAGS[DIR_V_DATE_BAK]
3           THEN IF .DISPLAY_BLOCK[DIR_L_BDTO] EQL 0 AND .DISPLAY_BLOCK[DIR_L_BDT4] EQL 0
3               THEN APPEND (DIR$_NOBRBAKDAT)
3               ELSE APPEND (0, '  !17%D', DISPLAY_BLOCK[DIR_L_BDTO]);
2           END;
2       MARK_POSITION = .LINE_DESC[DSC$W_LENGTH];
2
2       IF .QUAL_FLAGS[DIR_V_QUAL_OWNE]
2       THEN IF .DISPLAY_BLOCK[DIR_B_NODE] EQL 0
2            THEN APPEND (0, '  !#<!%I!>', .OWNER_WIDTH, .DISPLAY_BLOCK[DIR_L_FILEOWNER])
2            ELSE APPEND (0, '  !#%U', .OWNER_WIDTH, .DISPLAY_BLOCK[DIR_L_FILEOWNER]);
2
2       IF .QUAL_FLAGS[DIR_V_QUAL_PROT]
2       THEN
3           BEGIN
3           APPEND (0, '  (');
3           INCR J FROM 0 TO 3
3           DO
4               BEGIN
4               DIR$APPEND (0, .PROT_TABLE[.(DISPLAY_BLOCK[DIR_W_FILEPROT])<.J*4,4>]);
4               IF .J LSS 3 THEN APPEND (0, ',');
3               END;
3           APPEND (0, ')');
2           END;
2
2       IF .QUAL_FLAGS[DIR_V_QUAL_ACL] AND .ACL_LENGTH GTR 0
2       THEN
3           BEGIN
3           IF .LINE_DESC[DSC$W_LENGTH] GTR 0 THEN DIR$OUTPUT (0, LINE_DESC);
3           DIR$SHOW_ACL ();
2           END;
2
2       COLUMN_INDEX = .COLUMN_INDEX + 1;
2       SPACE_COUNT = .COLUMN_WIDTH - .LINE_DESC[DSC$W_LENGTH] + .COLUMN_BEGIN;
2       IF .COLUMN_COUNT GTR 1
2       AND .COLUMN_INDEX LSS .COLUMN_COUNT
2       THEN APPEND (0, '!#* ', .SPACE_COUNT);
2
2       RETURN 1;
2
1       END;                                         ! End of routine DIR$SHOW_INFO


                                                     .PSECT  $PLIT$,NOWRT,NOEXE,2

                                   000BC P.ABH:     .BLKB   0                                  ;
```

```
                                                  00000000. 000BC P.ABG:  .LONG   0
                                                  00000000' 000C0         .ADDRESS P.ABH
                                                        00  000C4 P.ABJ:  .BYTE   0
                                                            000C5         .BLKB   3
                                                  00000001. 000C8 P.ABI:  .LONG   1
                                                  00000000' 000CC         .ADDRESS P.ABJ
                                                            000D0 P.ABL:  .BLKB   0
                                                  00000000. 000D0 P.ABK:  .LONG   0
                                                  00000000' 000D4         .ADDRESS P.ABL
                                                44  41  21  000D8 P.ABN:  .ASCII  \!AD\
                                                            000DB         .BLKB   1
                                                  00000003. 000DC P.ABM:  .LONG   3
                                                  00000000' 000E0         .ADDRESS P.ABN
                                                44  41  21  000E4 P.ABP:  .ASCII  \!AD\
                                                            000E7         .BLKB   1
                                                  00000003. 000E8 P.ABO:  .LONG   3
                                                  00000000' 000EC         .ADDRESS P.ABP
                                                44  41  21  000F0 P.ABR:  .ASCII  \!AD\
                                                            000F3         .BLKB   1
                                                  00000003. 000F4 P.ABQ:  .LONG   3
                                                  00000000' 000F8         .ADDRESS P.ABR
                                                44  41  21  000FC P.ABT:  .ASCII  \!AD\
                                                            000FF         .BLKB   1
                                                  00000003. 00100 P.ABS:  .LONG   3
                                                  00000000' 00104         .ADDRESS P.ABT
                                            20  2A  23  21  00108 P.ABV:  .ASCII  \!#* \
                                                  00000004. 0010C P.ABU:  .LONG   4
                                                  00000000' 00110         .ADDRESS P.ABV
                                            20  2A  23  21  00114 P.ABX:  .ASCII  \!#* \
                                                  00000004. 00118 P.ABW:  .LONG   4
                                                  00000000' 0011C         .ADDRESS P.ABX
2C  57  55  21  2C  57  55  21  28  3C  39  31  21  20  20  00120 P.ABZ:  .ASCII  \  !19<(!UW,!UW,!UW)!>\
                                    3E  21  29  57  55  21  0012F
                                                            00135         .BLKB   3
                                                  00000015. 00138 P.ABY:  .LONG   21
                                                  00000000' 0013C         .ADDRESS P.ABZ
3E  21  4C  55  21  3C  23  21  2F  4C  55  23  21  20  20  00140 P.ACB:  .ASCII  \  !#UL/!#<!UL!>\
                                                            0014F         .BLKB   1
                                                  0000000F. 00150 P.ACA:  .LONG   15
                                                  00000000' 00154         .ADDRESS P.ACB
                                    4C  55  23  21  20  20  00158 P.ACD:  .ASCII  \  !#UL\
                                                            0015E         .BLKB   2
                                                  00000006. 00160 P.ACC:  .LONG   6
                                                  00000000' 00164         .ADDRESS P.ACD
                                44  25  37  31  21  20  20  00168 P.ACF:  .ASCII  \  !17%D\
                                                            0016F         .BLKB   1
                                                  00000007. 00170 P.ACE:  .LONG   7
                                                  00000000' 00174         .ADDRESS P.ACF
                                44  25  37  31  21  20  20  00178 P.ACH:  .ASCII  \  !17%D\
                                                            0017F         .BLKB   1
                                                  00000007. 00180 P.ACG:  .LONG   7
                                                  00000000' 00184         .ADDRESS P.ACH
                                44  25  37  31  21  20  20  00188 P.ACJ:  .ASCII  \  !17%D\
                                                            0018F         .BLKB   1
                                                  00000007. 00190 P.ACI:  .LONG   7
                                                  00000000' 00194         .ADDRESS P.ACJ
                                44  25  37  31  21  20  20  00198 P.ACL:  .ASCII  \  !17%D\
                                                  0019F          .BLKB    1
                                       00000007.  001A0 P.ACK:   .LONG    7                                          ;
                                       00000000'  001A4          .ADDRESS P.ACL                                      ;
        3E  21  49  25  21  3C  23  21  20  20    001A8 P.ACN:   .ASCII   \  !#<!%I!>\                               ;
                                                  001B2          .BLKB    2
                                       0000000A.  001B4 P.ACM:   .LONG    10                                         ;
                                       00000000'  001B8          .ADDRESS P.ACN                                      ;
                        55  25  23  21  20  20    001BC P.ACP:   .ASCII   \  !#%U\                                   ;
                                                  001C2          .BLKB    2
                                       00000006.  001C4 P.ACO:   .LONG    6                                          ;
                                       00000000'  001C8          .ADDRESS P.ACP                                      ;
                                    28  20  20    001CC P.ACR:   .ASCII   \  (\                                      ;
                                                  001CF          .BLKB    1
                                       00000003.  001D0 P.ACQ:   .LONG    3                                          ;
                                       C0000000'  001D4          .ADDRESS P.ACR                                      ;
                                            2C    001D8 P.ACT:   .ASCII   \,\                                        ;
                                                  001D9          .BLKB    3
                                       00000001   001DC P.ACS:   .LONG    1                                          ;
                                       00000000'  001E0          .ADDRESS P.ACT                                      ;
                                            29    001E4 P.ACV:   .ASCII   \)\                                        ;
                                                  001E5          .BLKB    3
                                       00000001   001E8 P.ACU:   .LONG    1                                          ;
                                       00000000'  001EC          .ADDRESS P.ACV                                      ;
                                20  2A  23  21    001F0 P.ACX:   .ASCII   \!#* \                                     ;
                                       00000004.  001F4 P.ACW:   .LONG    4                                          ;
                                       00000000'  001F8          .ADDRESS P.ACX                                      ;

                                                                 .EXTRN   DIR$OUTPUT, SYS$GETMSG

                                                                 .PSECT   $CODE$,NOWRT,2

                                            0FFC 00000 DIR$SHOW_INFO:
                                                                 .WORD    Save R2,R3,R4,R5,R6,R7,R8,R9,R10,R11       ; 1244
                          5B      0000V   CF   9E 00002          MOVAB    DIR$APPEND, R11                            ;
                          5A 00000000'    EF   9E 00007          MOVAB    QUAL_FLAGS, R10                            ;
                          5E              08   C2 0000E          SUBL2    #8, SP                                     ;
                          50         1C   AA   D0 00011          MOVL     DISPLAY_BLOCK, R0                          ; 1289
                          51       0119   C0   9A 00015          MOVZBL   281(R0), R1                                ; 1290
                          52       011A   C0   9A 0001A          MOVZBL   282(R0), R2                                ;
                          51              52   C0 0001F          ADDL2    R2, R1                                     ;
                          56       011B   C0   9A 00022          MOVZBL   283(R0), HEADER_LEN                        ; 1291
                          56              51   C0 00027          ADDL2    R1, HEADER_LEN                             ;
                          59         18   A0   9A 0002A          MOVZBL   24(R0), FILENAME_LEN                       ; 1292
                          59              56   C2 0002E          SUBL2    HEADER_LEN, FILENAME_LEN                   ;
                          58         18   A0   9A 00031          MOVZBL   24(R0), NAME_LEN                           ; 1293
                          51       011C   C0   9A 00035          MOVZBL   284(R0), R1                                ;
                          58              51   C2 0003A          SUBL2    R1, NAME_LEN                               ;
    56           00     0458   CA      0558   CA   2D 0003D          CMPC5    PREV_DIR_LEN, PREV_DIR, #0, HEADER_LEN, -  ; 1295
                                         19   A0      00046                   25(R0)                                     ;
                                              69   13 00048          BEQL     3$                                         ;
                                         34   AA   B5 0004A          TSTW     LINE_DESC                                  ; 1298
                                              0D   13 0004D          BEQL     1$                                         ;
                                         34   AA   9F 0004F          PUSHAB   LINE_DESC                                  ; 1301
                                              7E   D4 00052          CLRL     -(SP)                                      ;
                     0000G   CF               02   FB 00054          CALLS    #2, DIR$OUTPUT                             ;
                                         0C   AA   D4 00059          CLRL     COLUMN_INDEX                               ; 1302
                                       0558   CA   D5 0005C 1$:      TSTL     PREV_DIR_LEN                               ; 1304
```

```
                                                 05  13 00060       BEQL     2$
                       0000V  CF                 00  FB 00062       CALLS    #0, DIR$TOTAL
                        0558  CA                 56  D0 00067 2$:   MOVL     HEADER_LEN, PREV_DIR_LEN                        ; 1305
                              50           1C    AA  D0 0006C       MOVL     DISPLAY_BLOCK, R0                               ; 1306
          0458  CA        19  A0                 56  28 00070       MOVC3    HEADER_LEN, 25(R0), PREV_DIR
                37        01  AA                 03  E1 00077       BBC      #3, QUAL_FLAGS+1, 3$                            ; 1307
                32        01  AA                 02  E0 0007C       BBS      #2, QUAL_FLAGS+1, 3$                            ; 1308
                                        0000'    CF  9F 00081       PUSHAB   P.ABG                                           ; 1311
                                                 7E  D4 00085       CLRL     -(SP)
                       0000G  CF                 02  FB 00087       CALLS    #2, DIR$OUTPUT
                                         0458    CA  9F 0008C       PUSHAB   PREV_DIR                                        ; 1312
                                         0558    CA  DD 00090       PUSHL    PREV_DIR_LEN
                                        0000'    CF  9F 00094       PUSHAB   P.ABI
                                   000000000G    8F  DD 00098       PUSHL    #DIR$_NEWDIRECT
                       0000G  CF                 04  FB 0009E       CALLS    #4, DIR$OUTPUT
                                           02    AA  95 000A3       TSTB     QUAL_FLAGS+2                                    ; 1313
                                                 0B  19 000A6       BLSS     3$
                                        0000'    CF  9F 000A8       PUSHAB   P.ABK
                                                 7E  D4 000AC       CLRL     -(SP)
                       0000G  CF                 02  FB 000AE       CALLS    #2, DIR$OUTPUT
                              57         0660    CA  D0 000B3 3$:   MOVL     VERSION_COUNT, R7                               ; 1319
                                                 31  15 000B8       BLEQ     7$
                              54           1C    AA  D0 000BA       MOVL     DISPLAY_BLOCK, R4                               ; 1323
  58            00        055C  CA         065C  CA  2D 000BE       CMPC5    PREV_FILE_LEN, PREV_FILE, #0, NAME_LEN, -
                                           19    A4     000C7                25(R4)
                                                 06  12 000C9       BNEQ     4$
                                         0664    CA  D6 000CB       INCL     VERSION_INDEX                                   ; 1324
                                                 10  11 000CF       BRB      5$
                        065C  CA                 58  D0 000D1 4$:   MOVL     NAME_LEN, PREV_FILE_LEN                         ; 1327
          055C  CA        19  A4                 58  28 000D6       MOVC3    NAME_LEN, 25(R4), PREV_FILE                     ; 1328
                                         0664    CA  D4 000DD       CLRL     VERSION_INDEX                                   ; 1329
                              57         0664    CA  D1 000E1 5$:   CMPL     VERSION_INDEX, R7                               ; 1331
                                                 03  19 000E6       BLSS     7$
                                               03AF  31 000E8 6$:   BRW      46$
                              50           1C    AA  D0 000EB 7$:   MOVL     DISPLAY_BLOCK, R0                               ; 1336
                        043C  CA         0131    C0  C0 000EF       ADDL2    305(R0), TOTAL_USED
                        0440  CA         012D    C0  C0 000F6       ADDL2    301(R0), TOTAL_ALLOC                            ; 1337
                                         0444    CA  D6 000FD       INCL     TOTAL_FILES                                     ; 1338
                                           02    AA  95 00101       TSTB     QUAL_FLAGS+2                                    ; 1340
                                                 E2  19 00104       BLSS     6$
                DD        01  AA                 02  E0 00106       BBS      #2, QUAL_FLAGS+1, 6$
                          08  AA           0C    AA  D1 0010B       CMPL     COLUMN_INDEX, COLUMN_COUNT                      ; 1344
                                                 12  19 00110       BLSS     9$
                                           34    AA  B5 00112       TSTW     LINE_DESC                                       ; 1347
                                                 0A  13 00115       BEQL     8$
                                           34    AA  9F 00117       PUSHAB   LINE_DESC
                                                 7E  D4 0011A       CLRL     -(SP)
                       0000G  CF                 02  FB 0011C       CALLS    #2, DIR$OUTPUT
                                           0C    AA  D4 00121 8$:   CLRL     COLUMN_INDEX                                    ; 1348
                              57           34    AA  3C 00124 9$:   MOVZWL   LINE_DESC, MARK_POSITION                        ; 1350
                              58                 57  D0 00128       MOVL     MARK_POSITION, COLUMN_BEGIN
                10        01  AA                 03  E0 0012B       BBS      #3, QUAL_FLAGS+1, 10$                           ; 1352
                7E        1C  AA                 19  C1 00130       ADDL3    #25, DISPLAY_BLOCK, -(SP)                       ; 1353
                                                 56  DD 00135       PUSHL    HEADER_LEN
                                        0000'    CF  9F 00137       PUSHAB   P.ABM
                                                 7E  D4 0013B       CLRL     -(SP)
                              6B                 04  FB 0013D       CALLS    #4, DIR$APPEND
```

```
                            50              56       1C  AA  C1 00140 10$:   ADDL3   DISPLAY_BLOCK, HEADER_LEN, R0                       ; 1355
                                                     19  A0  9F 00145        PUSHAB  25(R0)                                              ;
                                                         59  DD 00148        PUSHL   FILENAME_LEN                                        ;
                                                  0000'  CF  9F 0014A        PUSHAB  P.ABO                                               ;
                                                         7E  D4 0014E        CLRL    -(SP)                                               ;
                                            6B           04  FB 00150        CALLS   #4, DIR$APPEND                                      ;
    0814      CA      34    AA              10           00  ED 00153        CMPZV   #0, #16, LINE_DESC, DISPLAY_WIDTH                   ; 1356
                                                         3B  19 0015B        BLSS    12$                                                 ;
                                      34    AA           57  B0 0015D        MOVW    MARK_POSITION, LINE_DESC                            ; 1359
                                                     34  AA  9F 00161        PUSHAB  LINE_DESC                                           ; 1360
                                                         7E  D4 00164        CLRL    -(SP)                                               ;
                                   0000G    CF           02  FB 00166        CALLS   #2, DIR$OUTPUT                                      ;
                                                         57  7C 0016B        CLRQ    MARK_POSITION                                       ; 1361
                                                     0C  AA  D4 0016D        CLRL    COLUMN_INDEX                                        ; 1362
                            10        01    AA           03  E0 00170        BBS     #3, QUAL_FLAGS+1, 11$                               ; 1363
                            7E        1C    AA           19  C1 00175        ADDL3   #25, DISPLAY_BLOCK, -(SP)                           ; 1364
                                                         56  DD 0017A        PUSHL   HEADER_LEN                                          ;
                                                  0000'  CF  9F 0017C        PUSHAB  P.ABQ                                               ;
                                                         7E  D4 00180        CLRL    -(SP)                                               ;
                                            6B           04  FB 00182        CALLS   #4, DIR$APPEND                                      ;
                            50              56       1C  AA  C1 00185 11$:   ADDL3   DISPLAY_BLOCK, HEADER_LEN, R0                       ; 1366
                                                     19  A0  9F 0018A        PUSHAB  25(R0)                                              ;
                                                         59  DD 0018D        PUSHL   FILENAME_LEN                                        ;
                                                  0000'  CF  9F 0018F        PUSHAB  P.ABS                                               ;
                                                         7E  D4 00193        CLRL    -(SP)                                               ;
                                            6B           04  FB 00195        CALLS   #4, DIR$APPEND                                      ;
                                            50       34  AA  3C 00198 12$:   MOVZWL  LINE_DESC, R0                                       ; 1369
                            50      0818    CA           50  C3 0019C        SUBL3   R0, FILENAME_WIDTH, R0                              ;
                            56              50           57  C1 001A2        ADDL3   MARK_POSITION, R0, SPACE_COUNT                      ; 1370
                                                         79  14 001A6        BGTR    16$                                                 ; 1371
                                            01       08  AA  D1 001A8        CMPL    COLUMN_COUNT, #1                                    ; 1374
                                                         2D  12 001AC        BNEQ    14$                                                 ;
                                                     34  AA  9F 001AE        PUSHAB  LINE_DESC                                           ; 1377
                                                         7E  D4 001B1        CLRL    -(SP)                                               ;
                                   0000G    CF           02  FB 001B3        CALLS   #2, DIR$OUTPUT                                      ;
                                                         58  D4 001B8        CLRL    COLUMN_BEGIN                                        ; 1378
                                            13       01  AA  E8 001BA        BLBS    QUAL_FLAGS+1, 13$                                   ; 1379
                            0E        02    AA           03  E0 001BE        BBS     #3, QUAL_FLAGS+2, 13$                               ;
                            0A              6A           03  E0 001C3        BBS     #3, QUAL_FLAGS, 13$                                 ; 1380
                            05        01    AA           05  E0 001C7        BBS     #5, QUAL_FLAGS+1, 13$                               ;
                                                     01  AA  95 001CC        TSTB    QUAL_FLAGS+1                                        ; 1381
                                                         5B  18 001CF        BGEQ    18$                                                 ;
                                                   0818  CA  DD 001D1 13$:   PUSHL   FILENAME_WIDTH                                      ; 1382
                                                  0000'  CF  9F 001D5        PUSHAB  P.ABU                                               ;
                                                         4C  11 001D9        BRB     17$                                                 ;
                            2F              6A           01  E1 001DB 14$:   BBC     #1, QUAL_FLAGS, 15$                                 ; 1386
                            2A        02    AA           03  E0 001DF        BBS     #3, QUAL_FLAGS+2, 15$                               ; 1387
                            26              6A           03  E0 001E4        BBS     #3, QUAL_FLAGS, 15$                                 ; 1388
                            21        01    AA           05  E0 001E8        BBS     #5, QUAL_FLAGS+1, 15$                               ; 1389
                                                     01  AA  95 001ED        TSTB    QUAL_FLAGS+1                                        ; 1390
                                                         1C  19 001F0        BLSS    15$                                                 ;
                                            18       01  AA  E8 001F2        BLBS    QUAL_FLAGS+1, 15$                                   ; 1391
                                            50       34  AA  3C 001F6        MOVZWL  LINE_DESC, R0                                       ; 1395
                                            50           5B  C2 001FA        SUBL2   COLUMN_BEGIN, R0                                    ;
                                            50       10  AA  C6 001FD        DIVL2   COLUMN_WIDTH, R0                                    ; 1396
                                      0C    AA           50  C0 00201        ADDL2   R0, COLUMN_INDEX                                    ; 1395
                                            50       10  AA  C4 00205        MULL2   COLUMN_WIDTH, R0                                    ; 1399
```

```
                                    58             50 C0 00209          ADDL2   R0, COLUMN_BEGIN                            :
                                                   1E 11 0020C          BRB     18$                                         : 1386
              34   AA               57     0818    CA A1 0020E 15$:     ADDW3   FILENAME_WIDTH, MARK_POSITION, LINE_DESC    : 1403
                                    50       34    AA 3C 00215          MOVZWL  LINE_DESC, R0                               : 1404
                               3B AA40       7C    8F 90 00219          MOVB    #124, LINE_BUFFER-1[R0]                     :
                                                   0B 11 0021F          BRB     18$                                         : 1371
                                                   56 DD 00221 16$:     PUSHL   SPACE_COUNT                                 : 1408
                                          0000'    CF 9F 00223          PUSHAB  P.ABW                                       :
                                                   7E D4 00227 17$:     CLRL    -(SP)                                       :
                                    6B             03 FB 00229          CALLS   #3, DIR$APPEND                              :
                                    72       1C    BA E8 0022C 18$:     BLBS    @DISPLAY_BLOCK, 21$                         : 1412
        08         00               6E             00 2C 00230          MOVC5   #0, (SP), #0, #8, LOCAL_DESC                : 1415
                                                   6E    00235
                   6E        0400   8F       34    AA A3 00236          SUBW3   LINE_DESC, #1024, LOCAL_DESC                : 1416
                                    50       3C    AA 9E 0023D          MOVAB   LINE_BUFFER, R0                             : 1417
                                    51       34    AA 3C 00241          MOVZWL  LINE_DESC, R1                               :
              04   AE               50             51 C1 00245          ADDL3   R1, R0, LOCAL_DESC+4                        :
                                    7E             01 7D 0024A          MOVQ    #1, -(SP)                                   : 1421
                                             08    AE 9F 0024D          PUSHAB  LOCAL_DESC                                  :
                                             0C    AE 9F 00250          PUSHAB  LOCAL_DESC                                  :
                                             1C    BA DD 00253          PUSHL   @DISPLAY_BLOCK                              :
                        00000000G   00             05 FB 00256          CALLS   #5, SYS$GETMSG                              :
                               34   AA             6E A0 0025D          ADDW2   LOCAL_DESC, LINE_DESC                       : 1422
0814    CA    34   AA               10             00 ED 00261          CMPZV   #0, #16, LINE_DESC, DISPLAY_WIDTH           : 1423
                                                   27 15 00269          BLEQ    20$                                         :
                               34   AA             57 B0 0026B          MOVW    MARK_POSITION, LINE_DESC                    : 1426
                                                   0A 13 0026F          BEQL    19$                                         : 1427
                                             34    AA 9F 00271          PUSHAB  LINE_DESC                                   :
                                                   7E D4 00274          CLRL    -(SP)                                       :
                            0000G   CF             02 FB 00276          CALLS   #2, DIR$OUTPUT                              :
                                    51             6E 3C 0027B 19$:     MOVZWL  LOCAL_DESC, R1                              : 1429
                                    51       04    AE C0 0027E          ADDL2   LOCAL_DESC+4, R1                            :
                                    50       3C  AA47 9E 00282          MOVAB   LINE_BUFFER[MARK_POSITION], R0              : 1430
              34   AA               51             50 A3 00287          SUBW3   R0, R1, LINE_DESC                           :
              3C   AA               60       34    AA 28 0028C          MOVC3   LINE_DESC, (R0), LINE_BUFFER                : 1431
                                             34    AA 9F 00292 20$:     PUSHAB  LINE_DESC                                   : 1434
                                                   7E D4 00295          CLRL    -(SP)                                       :
                            0000G   CF             02 FB 00297          CALLS   #2, DIR$OUTPUT                              :
                                             0C    AA D4 0029C          CLRL    COLUMN_INDEX                                : 1435
                                                 01F8 31 0029F          BRW     46$                                         : 1436
                                    37       01    AA E9 002A2 21$:     BLBC    QUAL_FLAGS+1, 24$                           : 1441
                                    50       1C    AA D0 002A6          MOVL    DISPLAY_BLOCK, R0                           : 1444
                                    51     0123    C0 3C 002AA          MOVZWL  291(R0), R1                                 :
                                                   0C 12 002AF          BNEQ    22$                                         :
                                           0125    C0 B5 002B1          TSTW    293(R0)                                     : 1445
                                                   06 12 002B5          BNEQ    22$                                         :
                                           0127    C0 B5 002B7          TSTW    295(R0)                                     : 1446
                                                   17 13 002BB          BEQL    23$                                         :
                                    7E     0127    C0 3C 002BD 22$:     MOVZWL  295(R0), -(SP)                              : 1449
                                    7E     0125    C0 3C 002C2          MOVZWL  293(R0), -(SP)                              :
                                                   51 DD 002C7          PUSHL   R1                                          :
                                          0000'    CF 9F 002C9          PUSHAB  P.ABY                                       :
                                                   7E D4 002CD          CLRL    -(SP)                                       :
                                    6B             05 FB 002CF          CALLS   #5, DIR$APPEND                              :
                                                   09 11 002D2          BRB     24$                                         :
                                      00000000G    8F DD 002D4 23$:     PUSHL   #DIR$_NOBRFILEID                            : 1450
                                    6B             01 FB 002DA          CALLS   #1, DIR$APPEND                              :
```

```
      3F     02  AA                03  E1  002DD  24$:    BBC     #3, QUAL_FLAGS+2, 28$                 ; 1453
                 50           1C   AA  D0  002E2          MOVL    DISPLAY_BLOCK, R0                     ; 1460
                 51         0820   CA  D0  002E6          MOVL    SIZE_WIDTH, R1                        ;
      17     02  AA                04  E1  002EB          BBC     #4, QUAL_FLAGS+2, 25$                 ; 1456
                            012D   C0  DD  002F0          PUSHL   301(R0)                               ; 1460
                                   51  DD  002F4          PUSHL   R1                                    ;
                            0131   C0  DD  002F6          PUSHL   305(R0)                               ;
                                   51  DD  002FA          PUSHL   R1                                    ;
                           0000'   CF  9F  002FC          PUSHAB  P.ACA                                 ;
                                   7E  D4  00300          CLRL    -(SP)                                 ;
                 6B                06  FB  00302          CALLS   #6, DIR$APPEND                        ;
                                   1A  11  00305          BRB     28$                                   ;
      06     02  AA                06  E1  00307  25$:    BBC     #6, QUAL_FLAGS+2, 26$                 ; 1464
                            0131   C0  DD  0030C          PUSHL   305(R0)                               ;
                                   04  11  00310          BRB     27$                                   ;
                            012D   C0  DD  00312  26$:    PUSHL   301(R0)                               ;
                                   51  DD  00316  27$:    PUSHL   R1                                    ;
                           0000'   CF  9F  00318          PUSHAB  P.ACC                                 ;
                                   7E  D4  0031C          CLRL    -(SP)                                 ;
                 6B                04  FB  0031E          CALLS   #4, DIR$APPEND                        ;
      03         6A                03  E0  00321  28$:    BBS     #3, QUAL_FLAGS, 29$                   ; 1467
                               00B0    31  00325          BRW     37$                                   ;
      28         6A                04  E1  00328  29$:    BBC     #4, QUAL_FLAGS, 31$                   ; 1470
                 50           1C   AA  D0  0032C          MOVL    DISPLAY_BLOCK, R0                     ; 1471
                            0170   C0  D5  00330          TSTL    368(R0)                               ;
                                   11  12  00334          BNEQ    30$                                   ;
                            0174   C0  D5  00336          TSTL    372(R0)                               ;
                                   0B  12  0033A          BNEQ    30$                                   ;
                       00000000G   8F  DD  0033C          PUSHL   #DIR$_NOBRCREDAT                      ; 1472
                 6B                01  FB  00342          CALLS   #1, DIR$APPEND                        ;
                                   0D  11  00345          BRB     31$                                   ;
                            0170   C0  9F  00347  30$:    PUSHAB  368(R0)                               ; 1473
                           0000'   CF  9F  0034B          PUSHAB  P.ACE                                 ;
                                   7E  D4  0034F          CLRL    -(SP)                                 ;
                 6B                03  FB  00351          CALLS   #3, DIR$APPEND                        ;
      28         6A                06  E1  00354  31$:    BBC     #6, QUAL_FLAGS, 33$                   ; 1474
                 50           1C   AA  D0  00358          MOVL    DISPLAY_BLOCK, R0                     ; 1475
                            0178   C0  D5  0035C          TSTL    376(R0)                               ;
                                   11  12  00360          BNEQ    32$                                   ;
                            017C   C0  D5  00362          TSTL    380(R0)                               ;
                                   0B  12  00366          BNEQ    32$                                   ;
                       00000000G   8F  DD  00368          PUSHL   #DIR$_NOBRREVDAT                      ; 1476
                 6B                01  FB  0036E          CALLS   #1, DIR$APPEND                        ;
                                   0D  11  00371          BRB     33$                                   ;
                            0178   C0  9F  00373  32$:    PUSHAB  376(R0)                               ; 1477
                           0000'   CF  9F  00377          PUSHAB  P.ACG                                 ;
                                   7E  D4  0037B          CLRL    -(SP)                                 ;
                 6B                03  FB  0037D          CALLS   #3, DIR$APPEND                        ;
      28         6A                05  E1  00380  33$:    BBC     #5, QUAL_FLAGS, 35$                   ; 1478
                 50           1C   AA  D0  00384          MOVL    DISPLAY_BLOCK, R0                     ; 1479
                            0180   C0  D5  00388          TSTL    384(R0)                               ;
                                   11  12  0038C          BNEQ    34$                                   ;
                            0184   C0  D5  0038E          TSTL    388(R0)                               ;
                                   0B  12  00392          BNEQ    34$                                   ;
                       00000000G   8F  DD  00394          PUSHL   #DIR$_NOBREXPDAT                      ; 1480
                 6B                01  FB  0039A          CALLS   #1, DIR$APPEND                        ;
                                   0D  11  0039D          BRB     35$                                   ;
```

```
                                    0180  C0  9F 0039F 34$:   PUSHAB  384(R0)                               ; 1481
                                   0000'  CF  9F 003A3        PUSHAB  P.ACI                                 ;
                                          7E  D4 003A7        CLRL    -(SP)                                 ;
                              6B          03  FB 003A9        CALLS   #3, DIR$APPEND                        ;
                                          6A  95 003AC 35$:   TSTB    QUAL_FLAGS                            ; 1482
                                          28  18 003AE        BGEQ    37$                                   ;
                              50      1C  AA  D0 003B0        MOVL    DISPLAY_BLOCK, R0                     ; 1483
                                    0188  C0  D5 003B4        TSTL    392(R0)                               ;
                                          11  12 003B8        BNEQ    36$                                   ;
                                    018C  C0  D5 003BA        TSTL    396(R0)                               ;
                                          08  12 003BE        BNEQ    36$                                   ;
                               00000000G  8F  DD 003C0        PUSHL   #DIR$_NOBRBAKDAT                      ; 1484
                              6B          01  FB 003C6        CALLS   #1, DIR$APPEND                        ;
                                          0D  11 003C9        BRB     37$                                   ;
                                    0188  C0  9F 003CB 36$:   PUSHAB  392(R0)                               ; 1485
                                   0000'  CF  9F 003CF        PUSHAB  P.ACK                                 ;
                                          7E  D4 003D3        CLRL    -(SP)                                 ;
                              6B          03  FB 003D5        CALLS   #3, DIR$APPEND                        ;
                              57      34  AA  3C 003D8 37$:   MOVZWL  LINE_DESC, MARK_POSITION              ; 1487
               2D       01    AA          05  E1 003DC        BBC     #5, QUAL_FLAGS+1, 40$                 ; 1489
                              50      1C  AA  D0 003E1        MOVL    DISPLAY_BLOCK, R0                     ; 1491
                              51      1C  AA  D0 003E5        MOVL    DISPLAY_BLOCK, R1                     ; 1490
                                    0119  C1  95 003E9        TSTB    281(R1)                               ;
                                          0E  12 003ED        BNEQ    38$                                   ;
                                    014E  C0  DD 003EF        PUSHL   334(R0)                               ; 1491
                                    081C  CA  DD 003F3        PUSHL   OWNER_WIDTH                           ;
                                   0000'  CF  9F 003F7        PUSHAB  P.ACM                                 ;
                                          0C  11 003FB        BRB     39$                                   ;
                                    014E  C0  DD 003FD 38$:   PUSHL   334(R0)                               ; 1492
                                    081C  CA  DD 00401        PUSHL   OWNER_WIDTH                           ;
                                   0000'  CF  9F 00405        PUSHAB  P.ACO                                 ;
                                          7E  D4 00409 39$:   CLRL    -(SP)                                 ;
                              6B          04  FB 0040B        CALLS   #4, DIR$APPEND                        ;
                                      01  AA  95 0040E 40$:   TSTB    QUAL_FLAGS+1                          ; 1494
                                          42  18 00411        BGEQ    43$                                   ;
                                   0000'  CF  9F 00413        PUSHAB  P.ACQ                                 ; 1497
                                          7E  D4 00417        CLRL    -(SP)                                 ;
                              6B          02  FB 00419        CALLS   #2, DIR$APPEND                        ;
                                          52  D4 0041C        CLRL    J                                     ; 1498
                              50      1C  AA  D0 0041E 41$:   MOVL    DISPLAY_BLOCK, R0                     ; 1501
                              53    0152  C0  9E 00422        MOVAB   338(R0), R3                           ;
               51             52          02  78 00427        ASHL    #2, J, R1                             ;
      50       63             04          51  EF 0042B        EXTZV   R1, #4, (R3), R0                      ;
                                   0000'CF40  DD 00430        PUSHL   PROT_TABLE[R0]                        ;
                                          7E  D4 00435        CLRL    -(SP)                                 ;
                              6B          02  FB 00437        CALLS   #2, DIR$APPEND                        ;
                              03          52  D1 0043A        CMPL    J, #3                                 ; 1502
                                          09  18 0043D        BGEQ    42$                                   ;
                                   0000'  CF  9F 0043F        PUSHAB  P.ACS                                 ;
                                          7E  D4 00443        CLRL    -(SP)                                 ;
                              6B          02  FB 00445        CALLS   #2, DIR$APPEND                        ;
               D2             52          03  F3 00448 42$:   AOBLEQ  #3, J, 41$                            ; 1498
                                   0000'  CF  9F 0044C        PUSHAB  P.ACU                                 ; 1504
                                          7E  D4 00450        CLRL    -(SP)                                 ;
                              6B          02  FB 00452        CALLS   #2, DIR$APPEND                        ;
                              1A          6A  E9 00455 43$:   BLBC    QUAL_FLAGS, 45$                       ; 1507
                                    082C  CA  D5 00458        TSTL    ACL_LENGTH                            ;
```

```
                                                      14  15 0045C          BLEQ    45$                                           ;
                                                 34   AA  B5 0045E          TSTW    LINE_DESC                                     ; 1510
                                                      0A  13 00461          BEQL    44$                                           ;
                                                 34   AA  9F 00463          PUSHAB  LINE_DESC                                     ;
                                                      7E  D4 00466          CLRL    -(SP)                                         ;
                                 0000G  CF            02  FB 00468          CALLS   #2, DIR$OUTPUT                                ;
                                 0000V  CF            00  FB 0046D 44$:     CALLS   #0, DIR$SHOW_ACL                              ; 1511
                                                 0C   AA  D6 00472 45$:     INCL    COLUMN_INDEX                                  ; 1514
                                        50       34   AA  3C 00475          MOVZWL  LINE_DESC, R0                                 ; 1515
                          50       10   AA            50  C3 00479          SUBL3   R0, COLUMN_WIDTH, R0                          ;
                          56            50            58  C1 0047E          ADDL3   COLUMN_BEGIN, R0, SPACE_COUNT                 ;
                                        01       08   AA  D1 00482          CMPL    COLUMN_COUNT, #1                              ; 1516
                                                      12  15 00486          BLEQ    46$                                           ;
                                   08   AA       0C   AA  D1 00488          CMPL    COLUMN_INDEX, COLUMN_COUNT                    ; 1517
                                                      0B  18 0048D          BGEQ    46$                                           ;
                                                      56  DD 0048F          PUSHL   SPACE_COUNT                                   ; 1518
                                               0000'  CF  9F 00491          PUSHAB  P.ACW                                         ;
                                                      7E  D4 00495          CLRL    -(SP)                                         ;
                                        6B            03  FB 00497          CALLS   #3, DIR$APPEND                                ;
                                        50            01  D0 0049A 46$:     MOVL    #1, R0                                        ; 1520
                                                          04 0049D          RET                                                   ; 1522

; Routine Size:  1182 bytes,    Routine Base:  $CODE$ + 0746
```

```
1 ROUTINE DIR$SHOW_FULL =
1
1 !++
1 !
1 ! FUNCTIONAL DESCRIPTION:
1 !       Display all of the information
1 !
1 ! CALLING SEQUENCE:
1 !       DIR$SHOW_FULL ()
1 !
1 ! INPUT PARAMETERS:
1 !       none
1 !
1 ! IMPLICIT INPUTS:
1 !       none
1 ! OUTPUT PARAMETERS:
1 !       none
1 !
1 ! IMPLICIT OUTPUTS:
1 !       none
1 !
1 ! ROUTINE VALUE:
1 !       1
1 !
1 ! SIDE EFFECTS:
1 !       none
1 !
1 !--
1
2 BEGIN
2
2 OWN
2       JOURNAL_FLAG;                                   ! Disable journaling
2
2 LOCAL
2       HEADER_LEN,                                     ! Length of file prefix
2       FILENAME_LEN,                                   ! Length of the file name
2       NAME_LEN,                                       ! Filename length minus version
2       SPACE_COUNT,                                    ! Number of spaces to pad
2       LOCAL_DESC      : $BBLOCK [DSC$C_S_BLN],                ! Local text descriptor
2       MARK_POSITION;                                  ! Saved line position
2
2 EXTERNAL ROUTINE
2       DIR$OUTPUT;                                     ! General output routine
2
2 ! See if it is necessary and time to do the header & trailer information.
2
2 HEADER_LEN = .DISPLAY_BLOCK[DIR_B_NODE] +
2               .DISPLAY_BLOCK[DIR_B_DEV] +
2               .DISPLAY_BLOCK[DIR_B_DIR];
2 FILENAME_LEN = .DISPLAY_BLOCK[DIR_B_FNS] - .HEADER_LEN;
2 NAME_LEN = .DISPLAY_BLOCK[DIR_B_FNS] - .DISPLAY_BLOCK[DIR_B_VER];
2
2 IF CH$NEQ (.PREV_DIR_LEN, PREV_DIR, .HEADER_LEN, DISPLAY_BLOCK[DIR_T_FILENAME])
2 THEN
3     BEGIN
3     IF .LINE_DESC[DSC$W_LENGTH] GTR 0
```

```
  3         THEN
  4             BEGIN
  4             DIR$OUTPUT (0, LINE_DESC);
  4             COLUMN_INDEX = 0
  3             END;
  3         IF .PREV_DIR_LEN NEQ 0 THEN DIR$TOTAL ();
  3         PREV_DIR_LEN = .HEADER_LEN;
  3         CH$MOVE (.HEADER_LEN, DISPLAY_BLOCK[DIR_T_FILENAME], PREV_DIR);
  3         IF .QUAL_FLAGS[DIR_V_QUAL_HEAD]
  3         AND NOT .QUAL_FLAGS[DIR_V_QUAL_GRAN]
  3         THEN
  4             BEGIN
  4             WRITE (0, '');
  4             WRITE (DIR$_NEWDIRECT, 0, .PREV_DIR_LEN, PREV_DIR);
  3             END;
  2         END;
  2
  2     ! Check for another version of the same file.
  2
  2     IF .VERSION_COUNT GTR 0
  2     THEN
  3         BEGIN
  3         IF CH$EQL (.PREV_FILE_LEN, PREV_FILE,
  3                 .NAME_LEN, DISPLAY_BLOCK[DIR_T_FILENAME], 0)
  3         THEN VERSION_INDEX = .VERSION_INDEX + 1
  3         ELSE
  4             BEGIN
  4             PREV_FILE_LEN = .NAME_LEN;
  4             CH$MOVE (.NAME_LEN, DISPLAY_BLOCK[DIR_T_FILENAME], PREV_FILE);
  4             VERSION_INDEX = 0;
  3             END;
  3         IF .VERSION_INDEX GEQ .VERSION_COUNT THEN RETURN 1;
  2         END;
  2
  2     ! Update the running totals.
  2
  2     TOTAL_USED = .TOTAL_USED + .DISPLAY_BLOCK[DIR_L_EFBLK];
  2     TOTAL_ALLOC = .TOTAL_ALLOC + .DISPLAY_BLOCK[DIR_L_HIBLK];
  2     TOTAL_FILES = .TOTAL_FILES + 1;
  2
  2     IF .QUAL_FLAGS[DIR_V_QUAL_TOTL] OR .QUAL_FLAGS[DIR_V_QUAL_GRAN] THEN RETURN 1;
  2
  2     WRITE (0, '');
  2
  2     CH$FILL (0, DSC$C_S_BLN, LINE_DESC);
  2     LINE_DESC[DSC$W_LENGTH] = 0;
  2     LINE_DESC[DSC$A_POINTER] = LINE_BUFFER;
  2
  2     IF NOT .QUAL_FLAGS[DIR_V_QUAL_HEAD]
  2     THEN APPEND (0, '!AD', .HEADER_LEN, DISPLAY_BLOCK[DIR_T_FILENAME]);
P 2     APPEND (0, '!AD', .FILENAME_LEN, VECTOR [DISPLAY_BLOCK[DIR_T_FILENAME],
  2                                             .HEADER_LEN; ,BYTE]);
  2     SPACE_COUNT = ((.LINE_DESC[DSC$W_LENGTH] / 20) + 1) * 20 - .LINE_DESC[DSC$W_LENGTH];
  2     IF .SPACE_COUNT EQL 0 THEN SPACE_COUNT = 20;
  2     APPEND (0, '!#* ', .SPACE_COUNT);
  2     MARK_POSITION = .LINE_DESC[DSC$W_LENGTH];
  2
```

```
; 1242           1637  2  ! Check to see if an error occurred opening the file.
; 1243           1638  2
; 1244           1639  2  IF NOT .DISPLAY_BLOCK[DIR_L_STATUS]
; 1245           1640  2  THEN
; 1246           1641  3      BEGIN
; 1247           1642  3      CH$FILL (0, DSC$C_S_BLN, LOCAL_DESC);
; 1248           1643  3      LOCAL_DESC[DSC$W_LENGTH] = 1024 - .LINE_DESC[DSC$W_LENGTH];
; 1249           1644  3      LOCAL_DESC[DSC$A_POINTER] = LINE_BUFFER[.LINE_DESC[DSC$W_LENGTH]];
; 1250         P 1645  3      $GETMSG (MSGID = .DISPLAY_BLOCK[DIR_L_STATUS],
; 1251         P 1646  3               MSGLEN = LOCAL_DESC,
; 1252         P 1647  3               BUFADR = LOCAL_DESC,
; 1253           1648  3               FLAGS = 1);
; 1254           1649  3      LINE_DESC[DSC$W_LENGTH] = .LINE_DESC[DSC$W_LENGTH] + .LOCAL_DESC[DSC$W_LENGTH];
; 1255           1650  3      IF .LINE_DESC[DSC$W_LENGTH] GTR .DISPLAY_WIDTH
; 1256           1651  3      THEN
; 1257           1652  4          BEGIN
; 1258           1653  4          LINE_DESC[DSC$W_LENGTH] = .MARK_POSITION;
; 1259           1654  4          DIR$OUTPUT (0, LINE_DESC);
; 1260           1655  4          CH$FILL (' ', 20, LINE_BUFFER);
; 1261           1656  4          LOCAL_DESC[DSC$W_LENGTH] = 1024 - 20;
; 1262           1657  4          LOCAL_DESC[DSC$A_POINTER] = LINE_BUFFER[20];
; 1263         P 1658  4          $GETMSG (MSGID = .DISPLAY_BLOCK[DIR_L_STATUS],
; 1264         P 1659  4                   MSGLEN = LOCAL_DESC,
; 1265         P 1660  4                   BUFADR = LOCAL_DESC,
; 1266           1661  4                   FLAGS = 1);
; 1267           1662  4          LINE_DESC[DSC$W_LENGTH] = .LINE_DESC[DSC$W_LENGTH] + 20;
; 1268           1663  3          END;
; 1269           1664  3      DIR$OUTPUT (0, LINE_DESC);
; 1270           1665  3      RETURN 1;
; 1271           1666  2      END;
; 1272           1667  2
; 1273           1668  2  IF .MARK_POSITION + 28 GTR .DISPLAY_WIDTH
; 1274           1669  2  THEN
; 1275           1670  3      BEGIN
; 1276           1671  3      LINE_DESC[DSC$W_LENGTH] = .LINE_DESC[DSC$W_LENGTH] - .SPACE_COUNT;
; 1277           1672  3      DIR$OUTPUT (0, LINE_DESC);
; 1278           1673  2      END;
; 1279           1674  2  IF .LINE_DESC[DSC$W_LENGTH] LEQ 28
; 1280           1675  2  THEN SPACE_COUNT = 30 - .LINE_DESC[DSC$W_LENGTH]
; 1281           1676  2  ELSE SPACE_COUNT = 2;
; 1282           1677  2  IF .DISPLAY_BLOCK[DIR_W_FID_NUM] NEQ 0
; 1283           1678  2  OR .DISPLAY_BLOCK[DIR_W_FID_SEQ] NEQ 0
; 1284           1679  2  OR .DISPLAY_BLOCK[DIR_W_FID_RVN] NEQ 0
; 1285         P 1680  2  THEN APPEND (DIR$_FULLFILEID, 0, .SPACE_COUNT,
; 1286         P 1681  2                                   .DISPLAY_BLOCK[DIR_W_FID_NUM],
; 1287         P 1682  2                                   .DISPLAY_BLOCK[DIR_W_FID_SEQ],
; 1288           1683  2                                   .DISPLAY_BLOCK[DIR_W_FID_RVN])
; 1289           1684  2  ELSE APPEND (DIR$_NOFUFILEID, 0, .SPACE_COUNT);
; 1290           1685  2  DIR$OUTPUT (0, LINE_DESC);
; 1291           1686  2
; 1292         P 1687  2  APPEND (DIR$_FULLSIZE, 0, .DISPLAY_BLOCK[DIR_L_EFBLK],
; 1293           1688  2                           .DISPLAY_BLOCK[DIR_L_HIBLK]);
; 1294           1689  2  MARK_POSITION = .LINE_DESC[DSC$W_LENGTH];
; 1295           1690  2  IF .DISPLAY_BLOCK[DIR_B_NODE] EQL 0
; 1296           1691  2  THEN APPEND (DIR$_FULLOWNERID, 0, .DISPLAY_BLOCK[DIR_L_FILEOWNER])
; 1297           1692  2  ELSE APPEND (DIR$_FULLOWNERUIC, 0, .DISPLAY_BLOCK[DIR_L_FILEOWNER]);
; 1298           1693  2  IF .LINE_DESC[DSC$W_LENGTH] GTR .DISPLAY_WIDTH
; 1299            1694  2 THEN
; 1300            1695  3     BEGIN
; 1301            1696  3     LINE_DESC[DSC$W_LENGTH] = .MARK_POSITION;
; 1302            1697  3     DIR$OUTPUT (0, LINE_DESC);
; 1303            1698  3     IF .DISPLAY_BLOCK[DIR_B_NODE] EQL 0
; 1304            1699  3     THEN APPEND (DIR$_FULLOWNERID, 0, .DISPLAY_BLOCK[DIR_L_FILEOWNER])
; 1305            1700  3     ELSE APPEND (DIR$_FULLOWNERUIC, 0, .DISPLAY_BLOCK[DIR_L_FILEOWNER]);
; 1306            1701  2     END;
; 1307            1702  2 DIR$OUTPUT (0, LINE_DESC);
; 1308            1703  2 IF .DISPLAY_BLOCK[DIR_L_CDT0] EQL 0 AND .DISPLAY_BLOCK[DIR_L_CDT4] EQL 0
; 1309            1704  2 THEN APPEND (DIR$_NOFOCREDAT)
; 1310            1705  2 ELSE APPEND (DIR$_FULLCREDAT, 0, DISPLAY_BLOCK[DIR_L_CDT0]);
; 1311            1706  2 IF .DISPLAY_BLOCK[DIR_L_RDT0] EQL 0 AND .DISPLAY_BLOCK[DIR_L_RDT4] EQL 0
; 1312            1707  2 THEN APPEND (DIR$_NOFOREVDAT)
; 1313          P 1708  2 ELSE APPEND (DIR$_FULLREVDAT, 0, DISPLAY_BLOCK[DIR_L_RDT0],
; 1314            1709  2                                    .DISPLAY_BLOCK[DIR_B_REVISION]);
; 1315            1710  2 DIR$OUTPUT (0, LINE_DESC);
; 1316            1711  2
; 1317            1712  2 IF .DISPLAY_BLOCK[DIR_L_EDT0] EQL 0 AND .DISPLAY_BLOCK[DIR_L_EDT4] EQL 0
; 1318            1713  2 THEN APPEND (DIR$_NOFOEXPDAT)
; 1319            1714  2 ELSE APPEND (DIR$_FULLEXPDAT, 0, DISPLAY_BLOCK[DIR_L_EDT0]);
; 1320            1715  2 IF .DISPLAY_BLOCK[DIR_L_BDT0] EQL 0 AND .DISPLAY_BLOCK[DIR_L_BDT4] EQL 0
; 1321            1716  2 THEN APPEND (DIR$_NOFOBAKDAT)
; 1322            1717  2 ELSE APPEND (DIR$_FULLBAKDAT, 0, DISPLAY_BLOCK[DIR_L_BDT0]);
; 1323            1718  2 DIR$OUTPUT (0, LINE_DESC);
; 1324            1719  2
; 1325            1720  2 APPEND (DIR$_FILEORG);
; 1326            1721  2 SELECTONEU .DISPLAY_BLOCK[DIR_V_FILEORG] OF
; 1327            1722  2 SET
; 1328            1723  2     [DIR_C_SEQUENTIAL]: APPEND (DIR$_FILORGSEQ);
; 1329            1724  2     [DIR_C_RELATIVE]:   APPEND (DIR$_FILORGREL, 0, .DISPLAY_BLOCK[DIR_L_MRN]);
; 1330            1725  3     [DIR_C_INDEXED]:    BEGIN
; 1331            1726  3                         APPEND (DIR$_FILORGIDX);
; 1332            1727  3                         IF .DISPLAY_BLOCK[DIR_B_NOKEYS] NEQ 0
; 1333            1728  3                         THEN
; 1334            1729  4                             BEGIN
; 1335          P 1730  4                             APPEND (DIR$_IDXPROLOG, 0, .DISPLAY_BLOCK[DIR_W_PVN],
; 1336            1731  4                                                        .DISPLAY_BLOCK[DIR_B_NOKEYS]);
; 1337            1732  4                             IF .DISPLAY_BLOCK[DIR_B_NOAREAS] GTRU 1
; 1338            1733  4                             THEN
; 1339            1734  5                                 BEGIN
; 1340            1735  5                                 DIR$OUTPUT (0, LINE_DESC);
; 1341            1736  5                                 APPEND (DIR$_IDXAREA, 0, .DISPLAY_BLOCK[DIR_B_NOAREAS]);
; 1342            1737  4                                 END;
; 1343            1738  3                             END;
; 1344            1739  2                         END;
; 1345            1740  2     [OTHERWISE]:        APPEND (DIR$_FILORGUNK, 0, .DISPLAY_BLOCK[DIR_V_FILEORG]);
; 1346            1741  2     TES;
; 1347            1742  2 DIR$OUTPUT (0, LINE_DESC);
; 1348            1743  2
; 1349            1744  2 APPEND (DIR$_FILEATTR, 0, .DISPLAY_BLOCK[DIR_L_HIBLK], .DISPLAY_BLOCK[DIR_W_DEFEXT]);
; 1350            1745  2 MARK_POSITION = .LINE_DESC[DSC$W_LENGTH];
; 1351            1746  2 IF .DISPLAY_BLOCK[DIR_B_BKTSIZE] NEQ 0
; 1352            1747  2 THEN
; 1353            1748  3     BEGIN
; 1354            1749  3     INCR J FROM 1 TO 2
; 1355            1750  3     DO
; 1356          1751  4             BEGIN
; 1357          1752  4             IF .LINE_DESC[DSC$W_LENGTH] GTR 0 THEN APPEND (0, ', ');
; 1358          1753  4             IF .LINE_DESC[DSC$W_LENGTH] EQL 0 THEN APPEND (0, '!20* ');
; 1359          1754  4             IF .DISPLAY_BLOCK[DIR_V_FILEORG] EQL DIR_C_INDEXED
; 1360          1755  4             THEN APPEND (DIR$_MAXBKTSIZ, 0, .DISPLAY_BLOCK[DIR_B_BKTSIZE])
; 1361          1756  4             ELSE APPEND (DIR$_BUCKETSIZ, 0, .DISPLAY_BLOCK[DIR_B_BKTSIZE]);
; 1362          1757  4             IF .LINE_DESC[DSC$W_LENGTH] GTR .DISPLAY_WIDTH
; 1363          1758  4             THEN
; 1364          1759  5                 BEGIN
; 1365          1760  5                 LINE_DESC[DSC$W_LENGTH] = .MARK_POSITION;
; 1366          1761  5                 DIR$OUTPUT (0, LINE_DESC);
; 1367          1762  5                 END
; 1368          1763  4             ELSE EXITLOOP;
; 1369          1764  3             END;
; 1370          1765  2         END;
; 1371          1766  2     MARK_POSITION = .LINE_DESC[DSC$W_LENGTH];
; 1372          1767  2     INCR J FROM 1 TO 2
; 1373          1768  2     DO
; 1374          1769  3         BEGIN
; 1375          1770  3         IF .LINE_DESC[DSC$W_LENGTH] GTR 0 THEN APPEND (0, ', ');
; 1376          1771  3         IF .LINE_DESC[DSC$W_LENGTH] EQL 0 THEN APPEND (0, '!20* ');
; 1377          1772  3         APPEND (DIR$_GBLBUFCNT, 0, .DISPLAY_BLOCK[DIR_W_GBC]);
; 1378          1773  3         IF .LINE_DESC[DSC$W_LENGTH] GTR .DISPLAY_WIDTH
; 1379          1774  3         THEN
; 1380          1775  4             BEGIN
; 1381          1776  4             LINE_DESC[DSC$W_LENGTH] = .MARK_POSITION;
; 1382          1777  4             DIR$OUTPUT (0, LINE_DESC);
; 1383          1778  4             END
; 1384          1779  3         ELSE EXITLOOP;
; 1385          1780  2         END;
; 1386          1781  2     MARK_POSITION = .LINE_DESC[DSC$W_LENGTH];
; 1387          1782  2     INCR J FROM 1 TO 2
; 1388          1783  2     DO
; 1389          1784  3         BEGIN
; 1390          1785  3         IF .LINE_DESC[DSC$W_LENGTH] GTR 0 THEN APPEND (0, ', ');
; 1391          1786  3         IF .LINE_DESC[DSC$W_LENGTH] EQL 0 THEN APPEND (0, '!20* ');
; 1392          1787  3         IF .DISPLAY_BLOCK[DIR_W_VERLIMIT] EQL %X'7FFF'
; 1393          1788  3         THEN APPEND (DIR$_NOVERLIMIT)
; 1394          1789  3         ELSE APPEND (DIR$_VERLIMIT, 0, .DISPLAY_BLOCK[DIR_W_VERLIMIT]);
; 1395          1790  3         IF .LINE_DESC[DSC$W_LENGTH] GTR .DISPLAY_WIDTH
; 1396          1791  3         THEN
; 1397          1792  4             BEGIN
; 1398          1793  4             LINE_DESC[DSC$W_LENGTH] = .MARK_POSITION;
; 1399          1794  4             DIR$OUTPUT (0, LINE_DESC);
; 1400          1795  4             END
; 1401          1796  3         ELSE EXITLOOP;
; 1402          1797  2         END;
; 1403          1798  2     MARK_POSITION = .LINE_DESC[DSC$W_LENGTH];
; 1404          1799  2     IF .DISPLAY_BLOCK[DIR_V_CONTIG]
; 1405          1800  2     THEN
; 1406          1801  3         BEGIN
; 1407          1802  3         INCR J FROM 1 TO 2
; 1408          1803  3         DO
; 1409          1804  4             BEGIN
; 1410          1805  4             IF .LINE_DESC[DSC$W_LENGTH] GTR 0 THEN APPEND (0, ', ');
; 1411          1806  4             IF .LINE_DESC[DSC$W_LENGTH] EQL 0 THEN APPEND (0, '!20* ');
; 1412          1807  4             APPEND (DIR$_FILATRCTG);
; 1413          1808 4          IF .LINE_DESC[DSC$W_LENGTH] GTR .DISPLAY_WIDTH
; 1414          1809 4          THEN
; 1415          1810 5              BEGIN
; 1416          1811 5              LINE_DESC[DSC$W_LENGTH] = .MARK_POSITION;
; 1417          1812 5              DIR$OUTPUT (0, LINE_DESC);
; 1418          1813 5              END
; 1419          1814 4          ELSE EXITLOOP;
; 1420          1815 3          END;
; 1421          1816 2      END;
; 1422          1817 2  MARK_POSITION = .LINE_DESC[DSC$W_LENGTH];
; 1423          1818 2  IF .DISPLAY_BLOCK[DIR_V_CONTIGB]
; 1424          1819 2  THEN
; 1425          1820 3      BEGIN
; 1426          1821 3      INCR J FROM 1 TO 2
; 1427          1822 3      DO
; 1428          1823 4          BEGIN
; 1429          1824 4          IF .LINE_DESC[DSC$W_LENGTH] GTR 0 THEN APPEND (0, ', ');
; 1430          1825 4          IF .LINE_DESC[DSC$W_LENGTH] EQL 0 THEN APPEND (0, '!20* ');
; 1431          1826 4          APPEND (DIR$_FILATRCTB);
; 1432          1827 4          IF .LINE_DESC[DSC$W_LENGTH] GTR .DISPLAY_WIDTH
; 1433          1828 4          THEN
; 1434          1829 5              BEGIN
; 1435          1830 5              LINE_DESC[DSC$W_LENGTH] = .MARK_POSITION;
; 1436          1831 5              DIR$OUTPUT (0, LINE_DESC);
; 1437          1832 5              END
; 1438          1833 4          ELSE EXITLOOP;
; 1439          1834 3          END;
; 1440          1835 2      END;
; 1441          1836 2  MARK_POSITION = .LINE_DESC[DSC$W_LENGTH];
; 1442          1837 2  IF .DISPLAY_BLOCK[DIR_V_LOCKED]
; 1443          1838 2  THEN
; 1444          1839 3      BEGIN
; 1445          1840 3      INCR J FROM 1 TO 2
; 1446          1841 3      DO
; 1447          1842 4          BEGIN
; 1448          1843 4          IF .LINE_DESC[DSC$W_LENGTH] GTR 0 THEN APPEND (0, ', ');
; 1449          1844 4          IF .LINE_DESC[DSC$W_LENGTH] EQL 0 THEN APPEND (0, '!20* ');
; 1450          1845 4          APPEND (DIR$_FILATRLCK);
; 1451          1846 4          IF .LINE_DESC[DSC$W_LENGTH] GTR .DISPLAY_WIDTH
; 1452          1847 4          THEN
; 1453          1848 5              BEGIN
; 1454          1849 5              LINE_DESC[DSC$W_LENGTH] = .MARK_POSITION;
; 1455          1850 5              DIR$OUTPUT (0, LINE_DESC);
; 1456          1851 5              END
; 1457          1852 4          ELSE EXITLOOP;
; 1458          1853 3          END;
; 1459          1854 2      END;
; 1460          1855 2  MARK_POSITION = .LINE_DESC[DSC$W_LENGTH];
; 1461          1856 2  IF .DISPLAY_BLOCK[DIR_V_NOBACKUP]
; 1462          1857 2  THEN
; 1463          1858 3      BEGIN
; 1464          1859 3      INCR J FROM 1 TO 2
; 1465          1860 3      DO
; 1466          1861 4          BEGIN
; 1467          1862 4          IF .LINE_DESC[DSC$W_LENGTH] GTR 0 THEN APPEND (0, ', ');
; 1468          1863 4          IF .LINE_DESC[DSC$W_LENGTH] EQL 0 THEN APPEND (0, '!20* ');
; 1469          1864 4          APPEND (DIR$_FILATRNOBAK);
; 1470          1865  4          IF .LINE_DESC[DSC$W_LENGTH] GTR .DISPLAY_WIDTH
; 1471          1866  4          THEN
; 1472          1867  5              BEGIN
; 1473          1868  5              LINE_DESC[DSC$W_LENGTH] = .MARK_POSITION;
; 1474          1869  5              DIR$OUTPUT (0, LINE_DESC);
; 1475          1870  5              END
; 1476          1871  4          ELSE EXITLOOP;
; 1477          1872  3          END;
; 1478          1873  2      END;
; 1479          1874  2  MARK_POSITION = .LINE_DESC[DSC$W_LENGTH];
; 1480          1875  2  IF .DISPLAY_BLOCK[DIR_V_WRITEBACK]
; 1481          1876  2  THEN
; 1482          1877  3      BEGIN
; 1483          1878  3      INCR J FROM 1 TO 2
; 1484          1879  3      DO
; 1485          1880  4          BEGIN
; 1486          1881  4          IF .LINE_DESC[DSC$W_LENGTH] GTR 0 THEN APPEND (0, ', ');
; 1487          1882  4          IF .LINE_DESC[DSC$W_LENGTH] EQL 0 THEN APPEND (0, '!20* ');
; 1488          1883  4          APPEND (DIR$_FILATRWRBAK);
; 1489          1884  4          IF .LINE_DESC[DSC$W_LENGTH] GTR .DISPLAY_WIDTH
; 1490          1885  4          THEN
; 1491          1886  5              BEGIN
; 1492          1887  5              LINE_DESC[DSC$W_LENGTH] = .MARK_POSITION;
; 1493          1888  5              DIR$OUTPUT (0, LINE_DESC);
; 1494          1889  5              END
; 1495          1890  4          ELSE EXITLOOP;
; 1496          1891  3          END;
; 1497          1892  2      END;
; 1498          1893  2  MARK_POSITION = .LINE_DESC[DSC$W_LENGTH];
; 1499          1894  2  IF .DISPLAY_BLOCK[DIR_V_READCHECK]
; 1500          1895  2  THEN
; 1501          1896  3      BEGIN
; 1502          1897  3      INCR J FROM 1 TO 2
; 1503          1898  3      DO
; 1504          1899  4          BEGIN
; 1505          1900  4          IF .LINE_DESC[DSC$W_LENGTH] GTR 0 THEN APPEND (0, ', ');
; 1506          1901  4          IF .LINE_DESC[DSC$W_LENGTH] EQL 0 THEN APPEND (0, '!20* ');
; 1507          1902  4          APPEND (DIR$_FILATRRDCHK);
; 1508          1903  4          IF .LINE_DESC[DSC$W_LENGTH] GTR .DISPLAY_WIDTH
; 1509          1904  4          THEN
; 1510          1905  5              BEGIN
; 1511          1906  5              LINE_DESC[DSC$W_LENGTH] = .MARK_POSITION;
; 1512          1907  5              DIR$OUTPUT (0, LINE_DESC);
; 1513          1908  5              END
; 1514          1909  4          ELSE EXITLOOP;
; 1515          1910  3          END;
; 1516          1911  2      END;
; 1517          1912  2  MARK_POSITION = .LINE_DESC[DSC$W_LENGTH];
; 1518          1913  2  IF .DISPLAY_BLOCK[DIR_V_WRITCHECK]
; 1519          1914  2  THEN
; 1520          1915  3      BEGIN
; 1521          1916  3      INCR J FROM 1 TO 2
; 1522          1917  3      DO
; 1523          1918  4          BEGIN
; 1524          1919  4          IF .LINE_DESC[DSC$W_LENGTH] GTR 0 THEN APPEND (0, ', ');
; 1525          1920  4          IF .LINE_DESC[DSC$W_LENGTH] EQL 0 THEN APPEND (0, '!20* ');
; 1526          1921  4          APPEND (DIR$_FILATRWRCHK);
```

```
4               IF .LINE_DESC[DSC$W_LENGTH] GTR .DISPLAY_WIDTH
4               THEN
5                   BEGIN
5                   LINE_DESC[DSC$W_LENGTH] = .MARK_POSITION;
5                   DIR$OUTPUT (0, LINE_DESC);
5                   END
4               ELSE EXITLOOP;
3               END;
2           END;
2       MARK_POSITION = .LINE_DESC[DSC$W_LENGTH];
2       IF .DISPLAY_BLOCK[DIR_V_BADACL]
2       THEN
3           BEGIN
3           INCR J FROM 1 TO 2
3           DO
4               BEGIN
4               IF .LINE_DESC[DSC$W_LENGTH] GTR 0 THEN APPEND (0, ', ');
4               IF .LINE_DESC[DSC$W_LENGTH] EQL 0 THEN APPEND (0, '!20* ');
4               APPEND (DIR$_FILATRBADACL);
4               IF .LINE_DESC[DSC$W_LENGTH] GTR .DISPLAY_WIDTH
4               THEN
5                   BEGIN
5                   LINE_DESC[DSC$W_LENGTH] = .MARK_POSITION;
5                   DIR$OUTPUT (0, LINE_DESC);
5                   END
4               ELSE EXITLOOP;
3               END;
2           END;
2       MARK_POSITION = .LINE_DESC[DSC$W_LENGTH];
2       IF .DISPLAY_BLOCK[DIR_V_DIRECTORY]
2       THEN
3           BEGIN
3           INCR J FROM 1 TO 2
3           DO
4               BEGIN
4               IF .LINE_DESC[DSC$W_LENGTH] GTR 0 THEN APPEND (0, ', ');
4               IF .LINE_DESC[DSC$W_LENGTH] EQL 0 THEN APPEND (0, '!20* ');
4               APPEND (DIR$_FILATRDIR);
4               IF .LINE_DESC[DSC$W_LENGTH] GTR .DISPLAY_WIDTH
4               THEN
5                   BEGIN
5                   LINE_DESC[DSC$W_LENGTH] = .MARK_POSITION;
5                   DIR$OUTPUT (0, LINE_DESC);
5                   END
4               ELSE EXITLOOP;
3               END;
2           END;
2       MARK_POSITION = .LINE_DESC[DSC$W_LENGTH];
2       IF .DISPLAY_BLOCK[DIR_V_BADBLOCK]
2       THEN
3           BEGIN
3           INCR J FROM 1 TO 2
3           DO
4               BEGIN
4               IF .LINE_DESC[DSC$W_LENGTH] GTR 0 THEN APPEND (0, ', ');
4               IF .LINE_DESC[DSC$W_LENGTH] EQL 0 THEN APPEND (0, '!20* ');
4               APPEND (DIR$_FILATRBADBLK);
```

```
4                   IF .LINE_DESC[DSC$W_LENGTH] GTR .DISPLAY_WIDTH
4                   THEN
5                       BEGIN
5                       LINE_DESC[DSC$W_LENGTH] = .MARK_POSITION;
5                       DIR$OUTPUT (0, LINE_DESC);
5                       END
4                   ELSE EXITLOOP;
3                   END;
2               END;
2       MARK_POSITION = .LINE_DESC[DSC$W_LENGTH];
2       IF .DISPLAY_BLOCK[DIR_V_NOCHARGE]
2       THEN
3           BEGIN
3           INCR J FROM 1 TO 2
3           DO
4               BEGIN
4               IF .LINE_DESC[DSC$W_LENGTH] GTR 0 THEN APPEND (0, ', ');
4               IF .LINE_DESC[DSC$W_LENGTH] EQL 0 THEN APPEND (0, '!20* ');
4               APPEND (DIR$_FILATRNOCHRG);
4               IF .LINE_DESC[DSC$W_LENGTH] GTR .DISPLAY_WIDTH
4               THEN
5                   BEGIN
5                   LINE_DESC[DSC$W_LENGTH] = .MARK_POSITION;
5                   DIR$OUTPUT (0, LINE_DESC);
5                   END
4               ELSE EXITLOOP;
3               END;
2           END;
2       MARK_POSITION = .LINE_DESC[DSC$W_LENGTH];
2       IF .DISPLAY_BLOCK[DIR_V_ERASE]
2       THEN
3           BEGIN
3           INCR J FROM 1 TO 2
3           DO
4               BEGIN
4               IF .LINE_DESC[DSC$W_LENGTH] GTR 0 THEN APPEND (0, ', ');
4               IF .LINE_DESC[DSC$W_LENGTH] EQL 0 THEN APPEND (0, '!20* ');
4               APPEND (DIR$_FILATRERASE);
4               IF .LINE_DESC[DSC$W_LENGTH] GTR .DISPLAY_WIDTH
4               THEN
5                   BEGIN
5                   LINE_DESC[DSC$W_LENGTH] = .MARK_POSITION;
5                   DIR$OUTPUT (0, LINE_DESC);
5                   END
4               ELSE EXITLOOP;
3               END;
2           END;
2       IF .LINE_DESC[DSC$W_LENGTH] GTR 0 THEN DIR$OUTPUT (0, LINE_DESC);
2
2       APPEND (DIR$_RECFORMAT);
2       SELECTONEU .DISPLAY_BLOCK[DIR_V_RTYPE] OF SET
2           [DIR_C_FIXED]:      APPEND (DIR$_RECFMTFIX, 0, .DISPLAY_BLOCK[DIR_W_RSIZE]);
2           [DIR_C_VARIABLE]:   APPEND (DIR$_RECFMTVAR);
2           [DIR_C_VFC]:        APPEND (DIR$_RECFMTVFC, 0, .DISPLAY_BLOCK[DIR_B_VFCSIZE]);
2           [DIR_C_UNDEFINED]:  APPEND (DIR$_RECFMTUDF);
2           [DIR_C_STREAM]:     APPEND (DIR$_RECFMTSTM);
2           [DIR_C_STREAMLF]:   APPEND (DIR$_RECFMTSTMLF);
```

```
2       [DIR_C_STREAMCR]:   APPEND (DIR$_RECFMTSTMCR);
2       [OTHERWISE]:        APPEND (DIR$_RECFMTUNK, 0, .DISPLAY_BLOCK[DIR_V_RTYPE]);
2       TES;
2   IF .DISPLAY_BLOCK[DIR_V_RTYPE] NEQ DIR_C_FIXED
2   AND .DISPLAY_BLOCK[DIR_W_RSIZE] NEQ 0
2   THEN APPEND (DIR$_MAXRECSIZ, 0, .DISPLAY_BLOCK[DIR_W_RSIZE]);
2   DIR$OUTPUT (0, LINE_DESC);
2
2   APPEND (DIR$_RECATTR);
2   IF .DISPLAY_BLOCK[DIR_B_RATTRIB] EQL 0
2   THEN APPEND (DIR$_NORECATTR)
2   ELSE
3       BEGIN
3       MARK_POSITION = .LINE_DESC[DSC$W_LENGTH];
3       IF .DISPLAY_BLOCK[DIR_V_IMPLIEDCC] NEQ 0
3       THEN APPEND (DIR$_CRCARCTL)
3       ELSE IF .DISPLAY_BLOCK[DIR_V_FORTRANCC] NEQ 0
3       THEN APPEND (DIR$_FTNCARCTL)
3       ELSE IF .DISPLAY_BLOCK[DIR_V_PRINTCC] NEQ 0
3       THEN APPEND (DIR$_PRICARCTL)
3       ELSE APPEND (DIR$_NOCARCTL);
3       IF .DISPLAY_BLOCK[DIR_V_NOSPAN] NEQ 0
3       THEN
4           BEGIN
4           IF .MARK_POSITION NEQ .LINE_DESC[DSC$W_LENGTH] THEN APPEND (0, ', ');
4           APPEND (DIR$_NOSPAN);
3           END;
2       END;
2   DIR$OUTPUT (0, LINE_DESC);
2
2   IF .JOURNAL_FLAG
2   THEN
3       BEGIN
3       APPEND (DIR$_JNLENABLED);
3       IF .DISPLAY_BLOCK[DIR_W_JOURNAL] EQL 0
3       THEN APPEND (DIR$_NOJNLENB)
3       ELSE
4           BEGIN
4           IF .DISPLAY_BLOCK[DIR_V_AIJNL] THEN APPEND (0, 'AI,');
4           IF .DISPLAY_BLOCK[DIR_V_BIJNL] THEN APPEND (0, 'BI,');
4           IF .DISPLAY_BLOCK[DIR_V_ATJNL] THEN APPEND (0, 'AT,');
4           IF .DISPLAY_BLOCK[DIR_V_RUJNL] THEN APPEND (0, 'RU,');
4           IF .DISPLAY_BLOCK[DIR_V_ONLY_RU] THEN APPEND (0, 'ONLY_RU,');
4           IF .DISPLAY_BLOCK[DIR_V_NEVER_RU] THEN APPEND (0, 'NEVER_RU,');
4           LINE_DESC[DSC$W_LENGTH] = .LINE_DESC[DSC$W_LENGTH] - 1;
3           END;
3       DIR$OUTPUT (0, LINE_DESC);
3       IF .DISPLAY_BLOCK[DIR_B_BI_SIZE] NEQ 0
3       THEN WRITE (DIR$_BIJNLNAME, 0, DISPLAY_BLOCK[DIR_T_BI_JNLNAME])
3       ELSE IF .DISPLAY_BLOCK[DIR_V_BIJNL]
3           THEN WRITE (DIR$_NOBIJNL);
3       IF .DISPLAY_BLOCK[DIR_B_AI_SIZE] NEQ 0
3       THEN WRITE (DIR$_AIJNLNAME, 0, DISPLAY_BLOCK[DIR_T_AI_JNLNAME])
3       ELSE IF .DISPLAY_BLOCK[DIR_V_AIJNL]
3           THEN WRITE (DIR$_NOAIJNL);
3       IF .DISPLAY_BLOCK[DIR_B_AT_SIZE] NEQ 0
3       THEN WRITE (DIR$_ATJNLNAME, 0, DISPLAY_BLOCK[DIR_T_AT_JNLNAME])
```

```
; 1698          2093  3         ELSE IF .DISPLAY_BLOCK[DIR_V_ATJNL]
; 1699          2094  3             THEN WRITE (DIR$_NOATJNL);
; 1700          2095  2         END;
; 1701          2096  2
; 1702          2097  2     APPEND (DIR$_FILEPROT);
; 1703          2098  2     INCR J FROM 0 TO 3
; 1704          2099  2     DO
; 1705          2100  3         BEGIN
; 1706          2101  3         SELECTONE .J OF
; 1707          2102  3         SET
; 1708          2103  3             [0]:    APPEND (DIR$_SYSPROT);
; 1709          2104  3             [1]:    APPEND (DIR$_OWNPROT);
; 1710          2105  3             [2]:    APPEND (DIR$_GRPPROT);
; 1711          2106  3             [3]:    APPEND (DIR$_WORPROT);
; 1712          2107  3         TES;
; 1713          2108  3         DIR$APPEND (0, .PROT_TABLE[.(DISPLAY_BLOCK[DIR_W_FILEPROT])<.J*4,4>]);
; 1714          2109  2         END;
; 1715          2110  2     DIR$OUTPUT (0, LINE_DESC);
; 1716          2111  2
; 1717          2112  2     IF .ACL_LENGTH GTR 0
; 1718          2113  2     THEN DIR$SHOW_ACL ()
; 1719          2114  2     ELSE WRITE (DIR$_NOFILEACL);
; 1720          2115  2
; 1721          2116  2     RETURN 1;
; 1722          2117  2
; 1723          2118  1     END;                                               ! End of routine DIR$SHOW_FULL


                                                                   .PSECT  $PLIT$,NOWRT,NOEXE,2

                                          001FC P.ACZ:   .BLKB    0
                                00000000  001FC P.ACY:   .LONG    0
                                00000000' 00200          .ADDRESS P.ACZ
                                      00  00204 P.ADB:   .BYTE    0
                                          00205          .BLKB    3
                                00000001  00208 P.ADA:   .LONG    1
                                00000000' 0020C          .ADDRESS P.ADB
                                          00210 P.ADD:   .BLKB    0
                                00000000  00210 P.ADC:   .LONG    0
                                00000000' 00214          .ADDRESS P.ADD
                            44  41  21    00218 P.ADF:   .ASCII   \!AD\
                                          0021B          .BLKB    1
                                00000003  0021C P.ADE:   .LONG    3
                                00000000' 00220          .ADDRESS P.ADF
                            44  41  21    00224 P.ADH:   .ASCII   \!AD\
                                          00227          .BLKB    1
                                00000003  00228 P.ADG:   .LONG    3
                                00000000' 0022C          .ADDRESS P.ADH
                         20  2A  23  21   00230 P.ADJ:   .ASCII   \!#* \
                                00000004  00234 P.ADI:   .LONG    4
                                00000000' 00238          .ADDRESS P.ADJ
                                      00  0023C P.ADL:   .BYTE    0
                                          0023D          .BLKB    3
                                00000001  00240 P.ADK:   .LONG    1
                                00000000' 00244          .ADDRESS P.ADL
                                      00  00248 P.ADN:   .BYTE    0
```

```
           00249             .BLKB    3
00000001   0024C  P.ADM:     .LONG    1                                   .
00000000'  00250             .ADDRESS P.ADN                               .
      00   00254  P.ADP:     .BYTE    0                                   .
           00255             .BLKB    3
00000001   00258  P.ADO:     .LONG    1                                   .
00000000'  0025C             .ADDRESS P.ADP                               .
      00   00260  P.ADR:     .BYTE    0                                   .
           00261             .BLKB    3
00000001   00264  P.ADQ:     .LONG    1                                   .
00000000'  00268             .ADDRESS P.ADR                               .
      00   0026C  P.ADT:     .BYTE    0                                   .
           0026D             .BLKB    3
00000001   00270  P.ADS:     .LONG    1                                   .
00000000'  00274             .ADDRESS P.ADT                               .
      00   00278  P.ADV:     .BYTE    0                                   .
           00279             .BLKB    3
00000001   0027C  P.ADU:     .LONG    1                                   .
00000000'  00280             .ADDRESS P.ADV                               .
      00   00284  P.ADX:     .BYTE    0                                   .
           00285             .BLKB    3
00000001   00288  P.ADW:     .LONG    1                                   .
00000000'  0028C             .ADDRESS P.ADX                               .
      00   00290  P.ADZ:     .BYTE    0                                   .
           00291             .BLKB    3
00000001   00294  P.ADY:     .LONG    1                                   .
00000000'  00298             .ADDRESS P.ADZ                               .
      00   0029C  P.AEB:     .BYTE    0                                   .
           0029D             .BLKB    3
00000001   002A0  P.AEA:     .LONG    1                                   .
00000000'  002A4             .ADDRESS P.AEB                               .
      00   002A8  P.AED:     .BYTE    0                                   .
           002A9             .BLKB    3
00000001   002AC  P.AEC:     .LONG    1                                   .
00000000'  002B0             .ADDRESS P.AED                               .
      00   002B4  P.AEF:     .BYTE    0                                   .
           002B5             .BLKB    3
00000001   002B8  P.AEE:     .LONG    1                                   .
00000000'  002BC             .ADDRESS P.AEF                               .
      00   002C0  P.AEH:     .BYTE    0                                   .
           002C1             .BLKB    3
00000001   002C4  P.AEG:     .LONG    1                                   .
00000000'  002C8             .ADDRESS P.AEH                               .
      00   002CC  P.AEJ:     .BYTE    0                                   .
           002CD             .BLKB    3
00000001   002D0  P.AEI:     .LONG    1                                   .
00000000'  002D4             .ADDRESS P.AEJ                               .
      00   002D8  P.AEL:     .BYTE    0                                   .
           002D9             .BLKB    3
00000001   002DC  P.AEK:     .LONG    1                                   .
00000000'  002E0             .ADDRESS P.AEL                               .
      00   002E4  P.AEN:     .BYTE    0                                   .
           002E5             .BLKB    3
00000001   002E8  P.AEM:     .LONG    1                                   .
00000000'  002EC             .ADDRESS P.AEN                               .
      00   002F0  P.AEP:     .BYTE    0                                   .
           002F1             .BLKB    3
```

```
              00000001  002F4 P.AEO:  .LONG    1
              00000000' 002F8         .ADDRESS P.AEP
                 20  2C 002FC P.AER:  .ASCII   \, \
                        002FE         .BLKB    2
              00000002  00300 P.AEQ:  .LONG    2
              00000000' 00304         .ADDRESS P.AER
  20  2A  30  32  21    00308 P.AET:  .ASCII   \!20* \
                        0030D         .BLKB    3
              00000005  00310 P.AES:  .LONG    5
              00000000' 00314         .ADDRESS P.AET
                     00 00318 P.AEV:  .BYTE    0
                        00319         .BLKB    3
              00000001  0031C P.AEU:  .LONG    1
              00000000' 00320         .ADDRESS P.AEV
                     00 00324 P.AEX:  .BYTE    0
                        00325         .BLKB    3
              00000001  00328 P.AEW:  .LONG    1
              00000000' 0032C         .ADDRESS P.AEX
                 20  2C 00330 P.AEZ:  .ASCII   \, \
                        00332         .BLKB    2
              00000002  00334 P.AEY:  .LONG    2
              00000000' 00338         .ADDRESS P.AEZ
  20  2A  30  32  21    0033C P.AFB:  .ASCII   \!20* \
                        00341         .BLKB    3
              00000005  00344 P.AFA:  .LONG    5
              00000000' 00348         .ADDRESS P.AFB
                     00 0034C P.AFD:  .BYTE    0
                        0034D         .BLKB    3
              00000001  00350 P.AFC:  .LONG    1
              00000000' 00354         .ADDRESS P.AFD
                 20  2C 00358 P.AFF:  .ASCII   \, \
                        0035A         .BLKB    2
              00000002  0035C P.AFE:  .LONG    2
              00000000' 00360         .ADDRESS P.AFF
  20  2A  30  32  21    00364 P.AFH:  .ASCII   \!20* \
                        00369         .BLKB    3
              00000005  0036C P.AFG:  .LONG    5
              00000000' 00370         .ADDRESS P.AFH
                     00 00374 P.AFJ:  .BYTE    0
                        00375         .BLKB    3
              00000001  00378 P.AFI:  .LONG    1
              00000000' 0037C         .ADDRESS P.AFJ
                 20  2C 00380 P.AFL:  .ASCII   \, \
                        00382         .BLKB    2
              00000002  00384 P.AFK:  .LONG    2
              00000000' 00388         .ADDRESS P.AFL
  20  2A  30  32  21    0038C P.AFN:  .ASCII   \!20* \
                        00391         .BLKB    3
              00000005  00394 P.AFM:  .LONG    5
              00000000' 00398         .ADDRESS P.AFN
                 20  2C 0039C P.AFP:  .ASCII   \, \
                        0039E         .BLKB    2
              00000002  003A0 P.AFO:  .LONG    2
              00000000' 003A4         .ADDRESS P.AFP
  20  2A  30  32  21    003A8 P.AFR:  .ASCII   \!20* \
                        003AD         .BLKB    3
              00000005  003B0 P.AFQ:  .LONG    5
```

```
                    00000000' 003B4            .ADDRESS P.AFR
                        20 2C 003B8 P.AFT:     .ASCII   \, \
                              003BA            .BLKB    2
                    00000002  003BC P.AFS:     .LONG    2
                    00000000' 003C0            .ADDRESS P.AFT
        20  2A  30  32  21    003C4 P.AFV:     .ASCII   \!20* \
                              003C9            .BLKB    3
                    00000005  003CC P.AFU:     .LONG    5
                    00000000' 003D0            .ADDRESS P.AFV
                        20 2C 003D4 P.AFX:     .ASCII   \, \
                              003D6            .BLKB    2
                    00000002  003D8 P.AFW:     .LONG    2
                    00000000' 003DC            .ADDRESS P.AFX
        20  2A  30  32  21    003E0 P.AFZ:     .ASCII   \!20* \
                              003E5            .BLKB    3
                    00000005  003E8 P.AFY:     .LONG    5
                    00000000' 003EC            .ADDRESS P.AFZ
                        20 2C 003F0 P.AGB:     .ASCII   \, \
                              003F2            .BLKB    2
                    00000002  003F4 P.AGA:     .LONG    2
                    00000000' 003F8            .ADDRESS P.AGB
        20  2A  30  32  21    003FC P.AGD:     .ASCII   \!20* \
                              00401            .BLKB    3
                    00000005  00404 P.AGC:     .LONG    5
                    00000000' 00408            .ADDRESS P.AGD
                        20 2C 0040C P.AGF:     .ASCII   \, \
                              0040E            .BLKB    2
                    00000002  00410 P.AGE:     .LONG    2
                    00000000' 00414            .ADDRESS P.AGF
        20  2A  30  32  21    00418 P.AGH:     .ASCII   \!20* \
                              0041D            .BLKB    3
                    00000005  00420 P.AGG:     .LONG    5
                    00000000' 00424            .ADDRESS P.AGH
                        20 2C 00428 P.AGJ:     .ASCII   \, \
                              0042A            .BLKB    2
                    00000002  0042C P.AGI:     .LONG    2
                    00000000' 00430            .ADDRESS P.AGJ
        20  2A  30  32  21    00434 P.AGL:     .ASCII   \!20* \
                              00439            .BLKB    3
                    00000005  0043C P.AGK:     .LONG    5
                    00000000' 00440            .ADDRESS P.AGL
                        20 2C 00444 P.AGN:     .ASCII   \, \
                              00446            .BLKB    2
                    00000002  00448 P.AGM:     .LONG    2
                    00000000' 0044C            .ADDRESS P.AGN
        20  2A  30  32  21    00450 P.AGP:     .ASCII   \!20* \
                              00455            .BLKB    3
                    00000005  00458 P.AGO:     .LONG    5
                    00000000' 0045C            .ADDRESS P.AGP
                        20 2C 00460 P.AGR:     .ASCII   \, \
                              00462            .BLKB    2
                    00000002  00464 P.AGQ:     .LONG    2
                    00000000' 00468            .ADDRESS P.AGR
        20  2A  30  32  21    0046C P.AGT:     .ASCII   \!20* \
                              00471            .BLKB    3
                    00000005  00474 P.AGS:     .LONG    5
                    00000000' 00478            .ADDRESS P.AGT
```

```
                     20  2C  0047C P.AGV:  .ASCII   \, \                                          ;
                             0047E         .BLKB    2
                  00000002   00480 P.AGU:  .LONG    2                                             ;
                  00000000'  00484         .ADDRESS P.AGV                                         ;
      20  2A  30  32  21    00488 P.AGX:  .ASCII   \!20* \                                       ;
                             0048D         .BLKB    3
                  00000005   00490 P.AGW:  .LONG    5                                             ;
                  00000000'  00494         .ADDRESS P.AGX                                         ;
                     20  2C  00498 P.AGZ:  .ASCII   \, \                                          ;
                             0049A         .BLKB    2
                  00000002   0049C P.AGY:  .LONG    2                                             ;
                  00000000'  004A0         .ADDRESS P.AGZ                                         ;
      20  2A  30  32  21    004A4 P.AHB:  .ASCII   \!20* \                                       ;
                             004A9         .BLKB    3
                  00000005   004AC P.AHA:  .LONG    5                                             ;
                  00000000'  004B0         .ADDRESS P.AHB                                         ;
                     20  2C  004B4 P.AHD:  .ASCII   \, \                                          ;
                             004B6         .BLKB    2
                  00000002   004B8 P.AHC:  .LONG    2                                             ;
                  00000000'  004BC         .ADDRESS P.AHD                                         ;
      20  2A  30  32  21    004C0 P.AHF:  .ASCII   \!20* \                                       ;
                             004C5         .BLKB    3
                  00000005   004C8 P.AHE:  .LONG    5                                             ;
                  00000000'  004CC         .ADDRESS P.AHF                                         ;
                         00  004D0 P.AHH:  .BYTE    0                                             ;
                             004D1         .BLKB    3
                  00000001   004D4 P.AHG:  .LONG    1                                             ;
                  00000000'  004D8         .ADDRESS P.AHH                                         ;
                         00  004DC P.AHJ:  .BYTE    0                                             ;
                             004DD         .BLKB    3
                  00000001   004E0 P.AHI:  .LONG    1                                             ;
                  00000000'  004E4         .ADDRESS P.AHJ                                         ;
                         00  004E8 P.AHL:  .BYTE    0                                             ;
                             004E9         .BLKB    3
                  00000001   004EC P.AHK:  .LONG    1                                             ;
                  00000000'  004F0         .ADDRESS P.AHL                                         ;
                         00  004F4 P.AHN:  .BYTE    0                                             ;
                             004F5         .BLKB    3
                  00000001   004F8 P.AHM:  .LONG    1                                             ;
                  00000000'  004FC         .ADDRESS P.AHN                                         ;
                     20  2C  00500 P.AHP:  .ASCII   \, \                                          ;
                             00502         .BLKB    2
                  00000002   00504 P.AHO:  .LONG    2                                             ;
                  00000000'  00508         .ADDRESS P.AHP                                         ;
                 2C  49  41  0050C P.AHR:  .ASCII   \AI,\                                         ;
                             0050F         .BLKB    1
                  00000003   00510 P.AHQ:  .LONG    3                                             ;
                  00000000'  00514         .ADDRESS P.AHR                                         ;
                 2C  49  42  00518 P.AHT:  .ASCII   \BI,\                                         ;
                             0051B         .BLKB    1
                  00000003   0051C P.AHS:  .LONG    3                                             ;
                  00000000'  00520         .ADDRESS P.AHT                                         ;
                 2C  54  41  00524 P.AHV:  .ASCII   \AT,\                                         ;
                             00527         .BLKB    1
                  00000003   00528 P.AHU:  .LONG    3                                             ;
                  00000000'  0052C         .ADDRESS P.AHV                                         ;
                 2C  55  52  00530 P.AHX:  .ASCII   \RU,\                                         ;
```

```
                                                      00533           .BLKB    1
                                           00000003   00534 P.AHW:    .LONG    3                                        ;
                                           00000000'  00538           .ADDRESS P.AHX                                    ;
                    2C  55  52  5F  59  4C  4E  4F    0053C P.AHZ:    .ASCII   \ONLY_RU,\                               ;
                                           00000008   00544 P.AHY:    .LONG    8                                        ;
                                           00000000'  00548           .ADDRESS P.AHZ                                    ;
                2C  55  52  5F  52  45  56  45  4E    0054C P.AIB:    .ASCII   \NEVER_RU,\                              ;
                                                      00555           .BLKB    3
                                           00000009   00558 P.AIA:    .LONG    9                                        ;
                                           00000000'  0055C           .ADDRESS P.AIB                                    ;
                                                 00   00560 P.AID:    .BYTE    0                                        ;
                                                      00561           .BLKB    3
                                           00000001   00564 P.AIC:    .LONG    1                                        ;
                                           00000000'  00568           .ADDRESS P.AID                                    ;
                                                 00   0056C P.AIF:    .BYTE    0                                        ;
                                                      0056D           .BLKB    3
                                           00000001   00570 P.AIE:    .LONG    1                                        ;
                                           00000000'  00574           .ADDRESS P.AIF                                    ;
                                                 00   00578 P.AIH:    .BYTE    0                                        ;
                                                      00579           .BLKB    3
                                           00000001   0057C P.AIG:    .LONG    1                                        ;
                                           00000000'  00580           .ADDRESS P.AIH                                    ;

                                                                      .PSECT  $OWN$,NOEXE,2

                                                      00040 JOURNAL_FLAG:
                                                                      .BLKB    4


                                                                      .PSECT  $CODE$,NOWRT,2

                                                 0FFC 00000 DIR$SHOW_FULL:
                                                                      .WORD    Save R2,R3,R4,R5,R6,R7,R8,R9,R10,R11     ; 1523
                           5B     0000V   CF   9E 00002               MOVAB    DIR$APPEND, R11                          ;
                           5A 00000000'   EF   9E 00007               MOVAB    LINE_DESC, R10                           ;
                           5E             08   C2 0000E               SUBL2    #8, SP                                   ;
                           50        E8   AA   D0 00011               MOVL     DISPLAY_BLOCK, R0                        ; 1570
                           51      0119   C0   9A 00015               MOVZBL   281(R0), R1                              ; 1571
                           52      011A   C0   9A 0001A               MOVZBL   282(R0), R2                              ;
                           51             52   C0 0001F               ADDL2    R2, R1                                   ;
                           56      011B   C0   9A 00022               MOVZBL   283(R0), HEADER_LEN                      ; 1572
                           56             51   C0 00027               ADDL2    R1, HEADER_LEN                           ;
                           59        18   A0   9A 0002A               MOVZBL   24(R0), FILENAME_LEN                     ; 1573
                           59             56   C2 0002E               SUBL2    HEADER_LEN, FILENAME_LEN                 ;
                           57        18   A0   9A 00031               MOVZBL   24(R0), NAME_LEN                         ; 1574
                           51      011C   C0   9A 00035               MOVZBL   284(R0), R1                              ;
                           57             51   C2 0003A               SUBL2    R1, NAME_LEN                             ;
   56          00     0424 CA      0524   CA   2D 0003D               CMPC5    PREV_DIR_LEN, PREV_DIR, #0, HEADER_LEN, -; 1576
                                     19   A0      00046                        25(R0)                                   ;
                                          57   13 00048               BEQL     3$                                       ;
                                          6A   B5 0004A               TSTW     LINE_DESC                                ; 1579
                                          0C   13 0004C               BEQL     1$                                       ;
                                          5A   DD 0004E               PUSHL    R10                                      ; 1582
                                          7E   D4 00050               CLRL     -(SP)                                    ;
                     0000G CF             02   FB 00052               CALLS    #2, DIR$OUTPUT                           ;
                                     D8   AA   D4 00057               CLRL     COLUMN_INDEX                             ; 1583
```

```
                                 0524  CA  D5 0005A 1$:    TSTL    PREV_DIR_LEN                                        ; 1585
                                       05  13 0005E        BEQL    2$                                                  ;
                00C0V  CF              00  FB 00060        CALLS   #0, DIR$TOTAL                                       ;
                 0524  CA              56  D0 00065 2$:    MOVL    HEADER_LEN, PREV_DIR_LEN                            ; 1586
                       50          E8  AA  D0 0006A        MOVL    DISPLAY_BLOCK, R0                                   ; 1587
      0424  CA     19  A0              56  28 0006E        MOVC3   HEADER_LEN, 25(R0), PREV_DIR                        ;
            27     CD  AA              03  E1 00075        BBC     #3, QUAL_FLAGS+1, 3$                                ; 1588
            22     CD  AA              02  E0 0007A        BBS     #2, QUAL_FLAGS+1, 3$                                ; 1589
                                0000'  CF  9F 0007F        PUSHAB  P.ACY                                               ; 1592
                                       7E  D4 00083        CLRL    -(SP)                                               ;
                0000G  CF              02  FB 00085        CALLS   #2, DIR$OUTPUT                                      ;
                                 0424  CA  9F 0008A        PUSHAB  PREV_DIR                                            ; 1593
                                 0524  CA  DD 0008E        PUSHL   PREV_DIR_LEN                                        ;
                                0000'  CF  9F 00092        PUSHAB  P.ADA                                               ;
                           000000000G  8F  DD 00096        PUSHL   #DIR$_NEWDIRECT                                     ;
                0000G  CF              04  FB 0009C        CALLS   #4, DIR$OUTPUT                                      ;
                       58        062C  CA  D0 000A1 3$:    MOVL    VERSION_COUNT, R8                                   ; 1599
                                       31  15 000A6        BLEQ    7$                                                  ;
                       54          E8  AA  D0 000A8        MOVL    DISPLAY_BLOCK, R4                                   ; 1603
57          00   0528  CA        0628  CA  2D 000AC        CMPC5   PREV_FILE_LEN, PREV_FILE, #0, NAME_LEN, -           ;
                                   19  A4     000B5                25(R4)                                              ;
                                       06  12 000B7        BNEQ    4$                                                  ;
                                 0630  CA  D6 000B9        INCL    VERSION_INDEX                                       ; 1604
                                       10  11 000BD        BRB     5$                                                  ;
                 0628  CA              57  D0 000BF 4$:    MOVL    NAME_LEN, PREV_FILE_LEN                             ; 1607
      0528  CA     19  A4              57  28 000C4        MOVC3   NAME_LEN, 25(R4), PREV_FILE                         ; 1608
                                 0630  CA  D4 000CB        CLRL    VERSION_INDEX                                       ; 1609
                       58        0630  CA  D1 000CF 5$:    CMPL    VERSION_INDEX, R8                                   ; 1611
                                       03  19 000D4        BLSS    7$                                                  ;
                                     0B38  31 000D6 6$:    BRW     142$                                                ;
                       50          E8  AA  D0 000D9 7$:    MOVL    DISPLAY_BLOCK, R0                                   ; 1616
                 0408  CA        0131  C0  C0 000DD        ADDL2   305(R0), TOTAL_USED                                 ;
                 040C  CA        012D  C0  C0 000E4        ADDL2   301(R0), TOTAL_ALLOC                                ; 1617
                                 0410  CA  D6 000EB        INCL    TOTAL_FILES                                         ; 1618
                                   CE  AA  95 000EF        TSTB    QUAL_FLAGS+2                                        ; 1620
                                       E2  19 000F2        BLSS    6$                                                  ;
            DD     CD  AA              02  E0 000F4        BBS     #2, QUAL_FLAGS+1, 6$                                ;
                                0000'  CF  9F 000F9        PUSHAB  P.ADC                                               ; 1622
                                       7E  D4 000FD        CLRL    -(SP)                                               ;
                0000G  CF              02  FB 000FF        CALLS   #2, DIR$OUTPUT                                      ;
08          00         6E              00  2C 00104        MOVC5   #0, (SP), #0, #8, LINE_DESC                         ; 1624
                                       6A     00109                                                                    ;
                                       6A  B4 0010A        CLRW    LINE_DESC                                           ; 1625
                   04  AA          08  AA  9E 0010C        MOVAB   LINE_BUFFER, LINE_DESC+4                            ; 1626
            10     CD  AA              03  E0 00111        BBS     #3, QUAL_FLAGS+1, 8$                                ; 1628
            7E     E8  AA              19  C1 00116        ADDL3   #25, DISPLAY_BLOCK, -(SP)                           ; 1629
                                       56  DD 0011B        PUSHL   HEADER_LEN                                          ;
                                0000'  CF  9F 0011D        PUSHAB  P.ADE                                               ;
                                       7E  D4 00121        CLRL    -(SP)                                               ;
                       6B              04  FB 00123        CALLS   #4, DIR$APPEND                                      ;
            50         56          E8  AA  C1 00126 8$:    ADDL3   DISPLAY_BLOCK, HEADER_LEN, R0                       ; 1631
                                   19  A0  9F 0012B        PUSHAB  25(R0)                                              ;
                                       59  DD 0012E        PUSHL   FILENAME_LEN                                        ;
                                0000'  CF  9F 00130        PUSHAB  P.ADG                                               ;
                                       7E  D4 00134        CLRL    -(SP)                                               ;
                       6B              04  FB 00136        CALLS   #4, DIR$APPEND                                      ;
                       56              6A  3C 00139        MOVZWL  LINE_DESC, R6                                       ; 1632
```

```
                               56            14  C6 00013C         DIVL2    #20, R6                                ;
                               56            14  C4 00013F         MULL2    #20, R6                                ;
                               50            6A  3C 00142          MOVZWL   LINE_DESC, R0                          ;
                               56            50  C2 00145          SUBL2    R0, R6                                 ;
                               56            14  C0 00148          ADDL2    #20, SPACE_COUNT                       ;
                                             03  12 0014B          BNEQ     9$                                     ; 1633
                               56            14  D0 0014D          MOVL     #20, SPACE_COUNT                       ;
                                             56  DD 00150 9$:      PUSHL    SPACE_COUNT                            ; 1634
                                    0000'    CF  9F 00152          PUSHAB   P.ADI                                  ;
                                             7E  D4 00156          CLRL     -(SP)                                  ;
                               6B            03  FB 00158          CALLS    #3, DIR$APPEND                         ;
                               58            6A  3C 0015B          MOVZWL   LINE_DESC, R8                          ; 1635
                               57            58  D0 0015E          MOVL     R8, MARK_POSITION                      ;
                               70      E8    BA  E8 00161          BLBS     @DISPLAY_BLOCK, 11$                    ; 1639
        08      00             6E            00  2C 00165          MOVC5    #0, (SP), #0, #8, LOCAL_DESC           ; 1642
                                             6E     0016A                                                          ;
                6E        0400 8F            58  A3 0016B          SUBW3    R8, #1024, LOCAL_DESC                  ; 1643
                            04 AE      08  AA48  9E 00171          MOVAB    LINE_BUFFER[R8], LOCAL_DESC+4          ; 1644
                               7E            01  7D 00177          MOVQ     #1, -(SP)                              ; 1648
                                       08    AE  9F 0017A          PUSHAB   LOCAL_DESC                             ;
                                       0C    AE  9F 0017D          PUSHAB   LOCAL_DESC                             ;
                                       E8    BA  DD 00180          PUSHL    @DISPLAY_BLOCK                         ;
                     00000000G 00            05  FB 00183          CALLS    #5, SYS$GETMSG                         ;
                               6A            6E  A0 0018A          ADDW2    LOCAL_DESC, LINE_DESC                  ; 1649
07E0    CA      6A             10            00  ED 0018D          CMPZV    #0, #16, LINE_DESC, DISPLAY_WIDTH      ; 1650
                                             33  15 00194          BLEQ     10$                                    ;
                               6A            57  B0 00196          MOVW     MARK_POSITION, LINE_DESC               ; 1653
                                             5A  DD 00199          PUSHL    R10                                    ; 1654
                                             7E  D4 0019B          CLRL     -(SP)                                  ;
                         0000G CF            02  FB 0019D          CALLS    #2, DIR$OUTPUT                         ;
        14      20             6E            00  2C 001A2          MOVC5    #0, (SP), #32, #20, LINE_BUFFER        ; 1655
                                       08    AA     001A7                                                          ;
                               6E    03EC    8F  B0 001A9          MOVW     #1004, LOCAL_DESC                      ; 1656
                            04 AE      1C    AA  9E 001AE          MOVAB    LINE_BUFFER+20, LOCAL_DESC+4           ; 1657
                               7E            01  7D 001B3          MOVQ     #1, -(SP)                              ; 1661
                                       08    AE  9F 001B6          PUSHAB   LOCAL_DESC                             ;
                                       0C    AE  9F 001B9          PUSHAB   LOCAL_DESC                             ;
                                       E8    BA  DD 001BC          PUSHL    @DISPLAY_BLOCK                         ;
                     00000000G 00            05  FB 001BF          CALLS    #5, SYS$GETMSG                         ;
                               6A            14  A0 001C6          ADDW2    #20, LINE_DESC                         ; 1662
                                             5A  DD 001C9 10$:     PUSHL    R10                                    ; 1664
                                             7E  D4 001CB          CLRL     -(SP)                                  ;
                         0000G CF            02  FB 001CD          CALLS    #2, DIR$OUTPUT                         ;
                                           0A3C  31 001D2          BRW      142$                                   ; 1665
                               50      1C    A7  9E 001D5 11$:     MOVAB    28(R7), R0                             ; 1668
                          07E0 CA            50  D1 001D9          CMPL     R0, DISPLAY_WIDTH                      ;
                                             0C  15 001DE          BLEQ     12$                                    ;
                               6A            56  A2 001E0          SUBW2    SPACE_COUNT, LINE_DESC                 ; 1671
                                             5A  DD 001E3          PUSHL    R10                                    ; 1672
                                             7E  D4 001E5          CLRL     -(SP)                                  ;
                         0000G CF            02  FB 001E7          CALLS    #2, DIR$OUTPUT                         ;
                               1C            6A  B1 001EC 12$:     CMPW     LINE_DESC, #28                         ; 1674
                                             09  1A 001EF          BGTRU    13$                                    ;
                               56            6A  3C 001F1          MOVZWL   LINE_DESC, SPACE_COUNT                 ; 1675
                56             1E            56  C3 001F4          SUBL3    SPACE_COUNT, #30, SPACE_COUNT          ;
                                             03  11 001F8          BRB      14$                                    ;
                               56            02  D0 001FA 13$:     MOVL     #2, SPACE_COUNT                        ; 1676
```

```
                                50        E8  AA  D0 001FD 14$:  MOVL    DISPLAY_BLOCK, R0                   ; 1677
                                51      0123  C0  3C 00201       MOVZWL  291(R0), R1                         ;
                                              0C  12 00206       BNEQ    15$                                 ;
                                        0125  C0  B5 00208       TSTW    293(R0)                             ; 1678
                                              06  12 0020C       BNEQ    15$                                 ;
                                        0127  C0  B5 0020E       TSTW    295(R0)                             ; 1679
                                              1D  13 00212       BEQL    16$                                 ;
                                7E      0127  C0  3C 00214 15$:  MOVZWL  295(R0), -(SP)                      ; 1683
                                7E      0125  C0  3C 00219       MOVZWL  293(R0), -(SP)                      ;
                                              51  DD 0021E       PUSHL   R1                                  ;
                                              56  DD 00220       PUSHL   SPACE_COUNT                         ;
                                       0000'  CF  9F 00222       PUSHAB  P.ADK                               ;
                                   00000000G  8F  DD 00226       PUSHL   #DIR$_FULLFILEID                    ;
                                6B            06  FB 0022C       CALLS   #6, DIR$APPEND                      ;
                                              0F  11 0022F       BRB     17$                                 ;
                                              56  DD 00231 16$:  PUSHL   SPACE_COUNT                         ; 1684
                                       0000'  CF  9F 00233       PUSHAB  P.ADM                               ;
                                   00000000G  8F  DD 00237       PUSHL   #DIR$_NOFUFILEID                    ;
                                6B            03  FB 0023D       CALLS   #3, DIR$APPEND                      ;
                                              5A  DD 00240 17$:  PUSHL   R10                                 ; 1685
                                              7E  D4 00242       CLRL    -(SP)                               ;
                         0000G  CF            02  FB 00244       CALLS   #2, DIR$OUTPUT                      ;
                                50        E8  AA  D0 00249       MOVL    DISPLAY_BLOCK, R0                   ; 1688
                                        012D  C0  DD 0024D       PUSHL   301(R0)                             ;
                                        0131  C0  DD 00251       PUSHL   305(R0)                             ;
                                       0000'  CF  9F 00255       PUSHAB  P.ADO                               ;
                                   00000000G  8F  DD 00259       PUSHL   #DIR$_FULLSIZE                      ;
                                6B            04  FB 0025F       CALLS   #4, DIR$APPEND                      ;
                                57            6A  3C 00262       MOVZWL  LINE_DESC, MARK_POSITION            ; 1689
                                50        E8  AA  D0 00265       MOVL    DISPLAY_BLOCK, R0                   ; 1691
                                51        E8  AA  D0 00269       MOVL    DISPLAY_BLOCK, R1                   ; 1690
                                        0119  C1  95 0026D       TSTB    281(R1)                             ;
                                              10  12 00271       BNEQ    18$                                 ;
                                        014E  C0  DD 00273       PUSHL   334(R0)                             ; 1691
                                       0000'  CF  9F 00277       PUSHAB  P.ADQ                               ;
                                   00000000G  8F  DD 0027B       PUSHL   #DIR$_FULLOWNERID                   ;
                                              0E  11 00281       BRB     19$                                 ;
                                        014E  C0  DD 00283 18$:  PUSHL   334(R0)                             ; 1692
                                       0000'  CF  9F 00287       PUSHAB  P.ADS                               ;
                                   00000000G  8F  DD 0028B       PUSHL   #DIR$_FULLOWNERUIC                  ;
                                6B            03  FB 00291 19$:  CALLS   #3, DIR$APPEND                      ;
07E0   CA           6A          10            00  ED 00294       CMPZV   #0, #16, LINE_DESC, DISPLAY_WIDTH   ; 1693
                                              3B  15 0029B       BLEQ    22$                                 ;
                                6A            57  B0 0029D       MOVW    MARK_POSITION, LINE_DESC            ; 1696
                                              5A  DD 002A0       PUSHL   R10                                 ; 1697
                                              7E  D4 002A2       CLRL    -(SP)                               ;
                         0000G  CF            02  FB 002A4       CALLS   #2, DIR$OUTPUT                      ;
                                50        E8  AA  D0 002A9       MOVL    DISPLAY_BLOCK, R0                   ; 1699
                                51        E8  AA  D0 002AD       MOVL    DISPLAY_BLOCK, R1                   ; 1698
                                        0119  C1  95 002B1       TSTB    281(R1)                             ;
                                              10  12 002B5       BNEQ    20$                                 ;
                                        014E  C0  DD 002B7       PUSHL   334(R0)                             ; 1699
                                       0000'  CF  9F 002BB       PUSHAB  P.ADU                               ;
                                   00000000G  8F  DD 002BF       PUSHL   #DIR$_FULLOWNERID                   ;
                                              0E  11 002C5       BRB     21$                                 ;
                                        014E  C0  DD 002C7 20$:  PUSHL   334(R0)                             ; 1700
                                       0000'  CF  9F 002CB       PUSHAB  P.ADW                               ;
```

```
            00000000G  8F  DD 002CF        PUSHL   #DIR$_FULLOWNERUIC                ;
       6B              03  FB 002D5 21$:   CALLS   #3, DIR$APPEND                    ;
                       5A  DD 002D8 22$:   PUSHL   R10                               ; 1702
                       7E  D4 002DA        CLRL    -(SP)                             ;
 0000G CF              02  FB 002DC        CALLS   #2, DIR$OUTPUT                    ;
       50          E8  AA  D0 002E1        MOVL    DISPLAY_BLOCK, R0                 ; 1703
                 0170  C0  D5 002E5        TSTL    368(R0)                           ;
                       11  12 002E9        BNEQ    23$                               ;
                 0174  C0  D5 002EB        TSTL    372(R0)                           ;
                       0B  12 002EF        BNEQ    23$                               ;
            00000000G  8F  DD 002F1        PUSHL   #DIR$_NOFUCREDAT                  ; 1704
       6B              01  FB 002F7        CALLS   #1, DIR$APPEND                    ;
                       11  11 002FA        BRB     24$                               ;
                 0170  C0  9F 002FC 23$:   PUSHAB  368(R0)                           ; 1705
                0000'  CF  9F 00300        PUSHAB  P.ADY                             ;
            00000000G  8F  DD 00304        PUSHL   #DIR$_FULLCREDAT                  ;
       6B              03  FB 0030A        CALLS   #3, DIR$APPEND                    ;
       52          E8  AA  D0 0030D 24$:   MOVL    DISPLAY_BLOCK, R2                 ; 1706
                 0178  C2  D5 00311        TSTL    376(R2)                           ;
                       11  12 00315        BNEQ    25$                               ;
                 017C  C2  D5 00317        TSTL    380(R2)                           ;
                       0B  12 0031B        BNEQ    25$                               ;
            00000000G  8F  DD 0031D        PUSHL   #DIR$_NOFUREVDAT                  ; 1707
       6B              01  FB 00323        CALLS   #1, DIR$APPEND                    ;
                       16  11 00326        BRB     26$                               ;
       7E        016E  C2  3C 00328 25$:   MOVZWL  366(R2), -(SP)                    ; 1709
                 0178  C2  9F 0032D        PUSHAB  376(R2)                           ;
                0000'  CF  9F 00331        PUSHAB  P.AEA                             ;
            00000000G  8F  DD 00335        PUSHL   #DIR$_FULLREVDAT                  ;
       6B              04  FB 0033B        CALLS   #4, DIR$APPEND                    ;
                       5A  DD 0033E 26$:   PUSHL   R10                               ; 1710
                       7E  D4 00340        CLRL    -(SP)                             ;
 0000G CF              02  FB 00342        CALLS   #2, DIR$OUTPUT                    ;
       50          E8  AA  D0 00347        MOVL    DISPLAY_BLOCK, R0                 ; 1712
                 0180  C0  D5 0034B        TSTL    384(R0)                           ;
                       11  12 0034F        BNEQ    27$                               ;
                 0184  C0  D5 00351        TSTL    388(R0)                           ;
                       0B  12 00355        BNEQ    27$                               ;
            00000000G  8F  DD 00357        PUSHL   #DIR$_NOFUEXPDAT                  ; 1713
       6B              01  FB 0035D        CALLS   #1, DIR$APPEND                    ;
                       11  11 00360        BRB     28$                               ;
                 0180  C0  9F 00362 27$:   PUSHAB  384(R0)                           ; 1714
                0000'  CF  9F 00366        PUSHAB  P.AEC                             ;
            00000C00G  8F  DD 0036A        PUSHL   #DIR$_FULLEXPDAT                  ;
       6B              03  FB 00370        CALLS   #3, DIR$APPEND                    ;
       50          E8  AA  D0 00373 28$:   MOVL    DISPLAY_BLOCK, R0                 ; 1715
                 0188  C0  D5 00377        TSTL    392(R0)                           ;
                       11  12 0037B        BNEQ    29$                               ;
                 018C  C0  D5 0037D        TSTL    396(R0)                           ;
                       0B  12 00381        BNEQ    29$                               ;
            00000000G  8F  DD 00383        PUSHL   #DIR$_NOFUBAKDAT                  ; 1716
       6B              01  FB 00389        CALLS   #1, DIR$APPEND                    ;
                       11  11 0038C        BRB     30$                               ;
                 0188  C0  9F 0038E 29$:   PUSHAB  392(R0)                           ; 1717
                0000'  CF  9F 00392        PUSHAB  P.AEE                             ;
            00000000G  8F  DD 00396        PUSHL   #DIR$_FULLBAKDAT                  ;
       6B              03  FB 0039C        CALLS   #3, DIR$APPEND                    ;
```

```
                                        5A  DD 0039F 30$:   PUSHL   R10                                      : 1718
                                        7E  D4 003A1        CLRL    -(SP)                                    :
                       0000G  CF        02  FB 003A3        CALLS   #2, DIR$OUTPUT                           :
                              000000000G 8F DD 003A8        PUSHL   #DIR$_FILEORG                            : 1720
                              6B        01  FB 003AE        CALLS   #1, DIR$APPEND                           :
                              52     E8 AA  D0 003B1        MOVL    DISPLAY_BLOCK, R2                        : 1721
     53     0129    C2        04        04  EF 003B5        EXTZV   #4, #4, 297(R2), R3                      :
                                        0B  12 003BC        BNEQ    31$                                      : 1723
                              000000000G 8F DD 003BE        PUSHL   #DIR$_FILORGSEQ                          :
                              6B        01  FB 003C4        CALLS   #1, DIR$APPEND                           :
                                        7A  11 003C7        BRB     35$                                      :
                              01        53  D1 003C9 31$:   CMPL    R3, #1                                   : 1724
                                        10  12 003CC        BNEQ    32$                                      :
                                   0190 C2  DD 003CE        PUSHL   400(R2)                                  :
                                  0000' CF  9F 003D2        PUSHAB  P.AEG                                    :
                              000000000G 8F DD 003D6        PUSHL   #DIR$_FILORGREL                          :
                                        62  11 003DC        BRB     34$                                      :
                              02        53  D1 003DE 32$:   CMPL    R3, #2                                   : 1725
                                        51  12 003E1        BNEQ    33$                                      :
                              000000000G 8F DD 003E3        PUSHL   #DIR$_FILORGIDX                          : 1726
                              6B        01  FB 003E9        CALLS   #1, DIR$APPEND                           :
                              50     E8 AA  D0 003EC        MOVL    DISPLAY_BLOCK, R0                        : 1727
                              51   0195 C0  9A 003F0        MOVZBL  405(R0), R1                              :
                                        4C  13 003F5        BEQL    35$                                      :
                                        51  DD 003F7        PUSHL   R1                                       : 1731
                              7E   0196 C0  3C 003F9        MOVZWL  406(R0), -(SP)                           :
                                  0000' CF  9F 003FE        PUSHAB  P.AEI                                    :
                              000000000G 8F DD 00402        PUSHL   #DIR$_IDXPROLOG                          :
                              6B        04  FB 00408        CALLS   #4, DIR$APPEND                           :
                              50     E8 AA  D0 0040B        MOVL    DISPLAY_BLOCK, R0                        : 1732
                              01   0194 C0  91 0040F        CMPB    404(R0), #1                              :
                                        2D  1B 00414        BLEQU   35$                                      :
                                        5A  DD 00416        PUSHL   R10                                      : 1735
                                        7E  D4 00418        CLRL    -(SP)                                    :
                       0000G  CF        02  FB 0041A        CALLS   #2, DIR$OUTPUT                           :
                              50     E8 AA  D0 0041F        MOVL    DISPLAY_BLOCK, R0                        : 1736
                              7E   0194 C0  9A 00423        MOVZBL  404(R0), -(SP)                           :
                                  0000' CF  9F 00428        PUSHAB  P.AEK                                    :
                              000000000G 8F DD 0042C        PUSHL   #DIR$_IDXAREA                            :
                                        0C  11 00432        BRB     34$                                      :
                                        53  DD 00434 33$:   PUSHL   R3                                       : 1740
                                  0000' CF  9F 00436        PUSHAB  P.AEM                                    :
                              000000000G 8F DD 0043A        PUSHL   #DIR$_FILORGUNK                          :
                              6B        03  FB 00440 34$:   CALLS   #3, DIR$APPEND                           :
                                        5A  DD 00443 35$:   PUSHL   R10                                      : 1742
                                        7E  D4 00445        CLRL    -(SP)                                    :
                       0000G  CF        02  FB 00447        CALLS   #2, DIR$OUTPUT                           :
                              50     E8 AA  D0 0044C        MOVL    DISPLAY_BLOCK, R0                        : 1744
                              7E   013B C0  3C 00450        MOVZWL  315(R0), -(SP)                           :
                                   012D C0  DD 00455        PUSHL   301(R0)                                  :
                                  0000' CF  9F 00459        PUSHAB  P.AEO                                    :
                              000000000G 8F DD 0045D        PUSHL   #DIR$_FILEATTR                           :
                              6B        04  FB 00463        CALLS   #4, DIR$APPEND                           :
                              57        6A  3C 00466        MOVZWL  LINE_DESC, MARK_POSITION                 : 1745
                              50     E8 AA  D0 00469        MOVL    DISPLAY_BLOCK, R0                        : 1746
                                   0137 C0  95 0046D        TSTB    311(R0)                                  :
                                        6A  13 00471        BEQL    41$                                      :
```

```
                                52               01  D0 00473        MOVL     #1, J                                 ; 1749
                                                 6A  B5 00476 36$:   TSTW     LINE_DESC                             ; 1752
                                                 09  13 00478        BEQL     37$
                                         0000'   CF  9F 0047A        PUSHAB   P.AEQ
                                                 7E  D4 0047E        CLRL     -(SP)
                                6B               02  FB 00480        CALLS    #2, DIR$APPEND
                                                 6A  B5 00483 37$:   TSTW     LINE_DESC                             ; 1753
                                                 09  12 00485        BNEQ     38$
                                         0000'   CF  9F 00487        PUSHAB   P.AES
                                                 7E  D4 0048B        CLRL     -(SP)
                                6B               02  FB 0048D        CALLS    #2, DIR$APPEND
                                50          E8   AA  D0 00490 38$:   MOVL     DISPLAY_BLOCK, R0                     ; 1755
                                51          E8   AA  D0 00494        MOVL     DISPLAY_BLOCK, R1                     ; 1754
           02      0129   C1    04               04  ED 00498        CMPZV    #4, #4, 297(R1), #2
                                                 11  12 0049F        BNEQ     39$
                                7E        0137   C0  9A 004A1        MOVZBL   311(R0), -(SP)                        ; 1755
                                         0000'   CF  9F 004A6        PUSHAB   P.AEU
                                     00000000G   8F  DD 004AA        PUSHL    #DIR$_MAXBKTSIZ
                                                 0F  11 004B0        BRB      40$
                                7E        0137   C0  9A 004B2 39$:   MOVZBL   311(R0), -(SP)                        ; 1756
                                         0000'   CF  9F 004B7        PUSHAB   P.AEW
                                     00000000G   8F  DD 004BB        PUSHL    #DIR$_BUCKETSIZ
                                6B               03  FB 004C1 40$:   CALLS    #3, DIR$APPEND
  07E0     CA             6A    10               00  ED 004C4        CMPZV    #0, #16, LINE_DESC, DISPLAY_WIDTH     ; 1757
                                                 10  15 004CB        BLEQ     41$
                                6A               57  B0 004CD        MOVW     MARK_POSITION, LINE_DESC              ; 1760
                                                 5A  DD 004D0        PUSHL    R10                                   ; 1761
                                                 7E  D4 004D2        CLRL     -(SP)
                          0000G  CF              02  FB 004D4        CALLS    #2, DIR$OUTPUT
                          99    52               02  F3 004D9        AOBLEQ   #2, J, 36$                            ; 1749
                                57               6A  3C 004DD 41$:   MOVZWL   LINE_DESC, MARK_POSITION              ; 1766
                                52               01  D0 004E0        MOVL     #1, J                                 ; 1767
                                                 6A  B5 004E3 42$:   TSTW     LINE_DESC                             ; 1770
                                                 09  13 004E5        BEQL     43$
                                         0000'   CF  9F 004E7        PUSHAB   P.AEY
                                                 7E  D4 004EB        CLRL     -(SP)
                                6B               02  FB 004ED        CALLS    #2, DIR$APPEND
                                                 6A  B5 004F0 43$:   TSTW     LINE_DESC                             ; 1771
                                                 09  12 004F2        BNEQ     44$
                                         0000'   CF  9F 004F4        PUSHAB   P.AFA
                                                 7E  D4 004F8        CLRL     -(SP)
                                6B               02  FB 004FA        CALLS    #2, DIR$APPEND
                                50          E8   AA  D0 004FD 44$:   MOVL     DISPLAY_BLOCK, R0                     ; 1772
                                7E        013D   C0  3C 00501        MOVZWL   317(R0), -(SP)
                                         0000'   CF  9F 00506        PUSHAB   P.AFC
                                     00000000G   8F  DD 0050A        PUSHL    #DIR$_GBLBUFCNT
                                6B               03  FB 00510        CALLS    #3, DIR$APPEND
  07E0     CA             6A    10               00  ED 00513        CMPZV    #0, #16, LINE_DESC, DISPLAY_WIDTH     ; 1773
                                                 10  15 0051A        BLEQ     45$
                                6A               57  B0 0051C        MOVW     MARK_POSITION, LINE_DESC              ; 1776
                                                 5A  DD 0051F        PUSHL    R10                                   ; 1777
                                                 7E  D4 00521        CLRL     -(SP)
                          0000G  CF              02  FB 00523        CALLS    #2, DIR$OUTPUT
                          B7    52               02  F3 00528        AOBLEQ   #2, J, 42$                            ; 1767
                                57               6A  3C 0052C 45$:   MOVZWL   LINE_DESC, MARK_POSITION              ; 1781
                                52               01  D0 0052F        MOVL     #1, J                                 ; 1782
                                                 6A  B5 00532 46$:   TSTW     LINE_DESC                             ; 1785
                                     09  13 00534         BEQL     47$                                      :
                            0000'    CF  9F 00536         PUSHAB   P.AFE                                    :
                                     7E  D4 0053A         CLRL     -(SP)                                    :
                       6B            02  FB 0053C         CALLS    #2, DIR$APPEND                           :
                                     6A  B5 0053F 47$:    TSTW     LINE_DESC                                : 1786
                                     09  12 00541         BNEQ     48$                                      :
                            0000'    CF  9F 00543         PUSHAB   P.AFG                                    :
                                     7E  D4 00547         CLRL     -(SP)                                    :
                       6B            02  FB 00549         CALLS    #2, DIR$APPEND                           :
                       50       E8   AA  D0 0054C 48$:    MOVL     DISPLAY_BLOCK, R0                        : 1787
                 7FFF  8F     011D   C0  B1 00550         CMPW     285(R0), #32767                          :
                                     0B  12 00557         BNEQ     49$                                      :
                        00000000G    8F  DD 00559         PUSHL    #DIR$_NOVERLIMIT                         : 1788
                       6B            01  FB 0055F         CALLS    #1, DIR$APPEND                           :
                                     12  11 00562         BRB      50$                                      :
                       7E     011D   C0  3C 00564 49$:    MOVZWL   285(R0), -(SP)                           : 1789
                              0000'  CF  9F 00569         PUSHAB   P.AFI                                    :
                        00000000G    8F  DD 0056D         PUSHL    #DIR$_VERLIMIT                           :
                       6B            03  FB 00573         CALLS    #3, DIR$APPEND                           :
  07E0   CA      6A    10            00  ED 00576 50$:    CMPZV    #0, #16, LINE_DESC, DISPLAY_WIDTH        : 1790
                                     10  15 0057D         BLEQ     51$                                      :
                       6A            57  B0 0057F         MOVW     MARK_POSITION, LINE_DESC                 : 1793
                                     5A  DD 00582         PUSHL    R10                                      : 1794
                                     7E  D4 00584         CLRL     -(SP)                                    :
                 0000G CF            02  FB 00586         CALLS    #2, DIR$OUTPUT                           :
                 A3    52            02  F3 0058B         AOBLEQ   #2, J, 46$                               : 1782
                       57            6A  3C 0058F 51$:    MOVZWL   LINE_DESC, MARK_POSITION                 : 1798
                       50       E8   AA  D0 00592         MOVL     DISPLAY_BLOCK, R0                        : 1799
                              0149   C0  95 00596         TSTB     329(R0)                                  :
                                     3F  18 0059A         BGEQ     55$                                      :
                       52            01  D0 0059C         MOVL     #1, J                                    : 1802
                                     6A  B5 0059F 52$:    TSTW     LINE_DESC                                : 1805
                                     09  13 005A1         BEQL     53$                                      :
                            0000'    CF  9F 005A3         PUSHAB   P.AFK                                    :
                                     7E  D4 005A7         CLRL     -(SP)                                    :
                       6B            02  FB 005A9         CALLS    #2, DIR$APPEND                           :
                                     6A  B5 005AC 53$:    TSTW     LINE_DESC                                : 1806
                                     09  12 005AE         BNEQ     54$                                      :
                            0000'    CF  9F 005B0         PUSHAB   P.AFM                                    :
                                     7E  D4 005B4         CLRL     -(SP)                                    :
                       6B            02  FB 005B6         CALLS    #2, DIR$APPEND                           :
                        00000000G    8F  DD 005B9 54$:    PUSHL    #DIR$_FILATRCTG                          : 1807
                       6B            01  FB 005BF         CALLS    #1, DIR$APPEND                           :
  07E0   CA      6A    10            00  ED 005C2         CMPZV    #0, #16, LINE_DESC, DISPLAY_WIDTH        : 1808
                                     10  15 005C9         BLEQ     55$                                      :
                       6A            57  B0 005CB         MOVW     MAPK_POSITION, LINE_DESC                 : 1811
                                     5A  DD 005CE         PUSHL    R10                                      : 1812
                                     7E  D4 005D0         CLRL     -(SP)                                    :
                 0000G CF            02  FB 005D2         CALLS    #2, DIR$OUTPUT                           :
          C4           52            02  F3 005D7         AOBLEQ   #2, J, 52$                               : 1802
                       57            6A  3C 005DB 55$:    MOVZWL   LINE_DESC, MARK_POSITION                 : 1817
                       50       E8   AA  D0 005DE         MOVL     DISPLAY_BLOCK, R0                        : 1818
          3F     0149  C0            05  E1 005E2         BBC      #5, 329(R0), 59$                         :
                       52            01  D0 005E8         MOVL     #1, J                                    : 1821
                                     6A  B5 005EB 56$:    TSTW     LINE_DESC                                : 1824
                                     09  13 005ED         BEQL     57$                                      :
                            0000'    CF  9F 005EF         PUSHAB   P.AFO                                    :
```

```
                                                 7E  D4 005F3          CLRL     -(SP)                                    ;
                             6B                  02  FB 005F5          CALLS    #2, DIR$APPEND                           ;
                             6A                  B5 005F8 57$:         TSTW     LINE_DESC                                ; 1825
                             09                  12 005FA              BNEQ     58$                                      ;
                   0000'     CF                  9F 005FC              PUSHAB   P.AFQ                                    ;
                             7E                  D4 00600              CLRL     -(SP)                                    ;
                             6B                  02  FB 00602          CALLS    #2, DIR$APPEND                           ;
               00000000G     8F                  DD 00605 58$:         PUSHL    #DIR$_FILATRCTB                          ; 1826
                             6B                  01  FB 0060B          CALLS    #1, DIR$APPEND                           ;
  07E0   CA          6A      10                  00  ED 0060E          CMPZV    #0, #16, LINE_DESC, DISPLAY_WIDTH        ; 1827
                                                 10  15 00615          BLEQ     59$                                      ;
                             6A                  57  B0 00617          MOVW     MARK_POSITION, LINE_DESC                 ; 1830
                                                 5A  DD 0061A          PUSHL    R10                                      ; 1831
                                                 7E  D4 0061C          CLRL     -(SP)                                    ;
                   0000G     CF                  02  FB 0061E          CALLS    #2, DIR$OUTPUT                           ;
                     C4      52                  02  F3 00623          AOBLEQ   #2, J, 56$                               ; 1821
                             57                  6A  3C 00627 59$:     MOVZWL   LINE_DESC, MARK_POSITION                 ; 1836
                             50          E8      AA  D0 0062A          MOVL     DISPLAY_BLOCK, R0                        ; 1837
           3F      0149      C0                  06  E1 0062E          BBC      #6, 329(R0), 63$                         ;
                             52                  01  D0 00634          MOVL     #1, J                                    ; 1840
                                                 6A  B5 00637 60$:     TSTW     LINE_DESC                                ; 1843
                                                 09  13 00639          BEQL     61$                                      ;
                   0000'     CF                  9F 0063B              PUSHAB   P.AFS                                    ;
                                                 7E  D4 0063F          CLRL     -(SP)                                    ;
                             6B                  02  FB 00641          CALLS    #2, DIR$APPEND                           ;
                                                 6A  B5 00644 61$:     TSTW     LINE_DESC                                ; 1844
                                                 09  12 00646          BNEQ     62$                                      ;
                   0000'     CF                  9F 00648              PUSHAB   P.AFU                                    ;
                                                 7E  D4 0064C          CLRL     -(SP)                                    ;
                             6B                  02  FB 0064E          CALLS    #2, DIR$APPEND                           ;
               00000000G     8F                  DD 00651 62$:         PUSHL    #DIR$_FILATRLCK                          ; 1845
                             6B                  01  FB 00657          CALLS    #1, DIR$APPEND                           ;
  07E0   CA          6A      10                  00  ED 0065A          CMPZV    #0, #16, LINE_DESC, DISPLAY_WIDTH        ; 1846
                                                 10  15 00661          BLEQ     63$                                      ;
                             6A                  57  B0 00663          MOVW     MARK_POSITION, LINE_DESC                 ; 1849
                                                 5A  DD 00666          PUSHL    R10                                      ; 1850
                                                 7E  D4 00668          CLRL     -(SP)                                    ;
                   0000G     CF                  02  FB 0066A          CALLS    #2, DIR$OUTPUT                           ;
                     C4      52                  02  F3 0066F          AOBLEQ   #2, J, 60$                               ; 1840
                             57                  6A  3C 00673 63$:     MOVZWL   LINE_DESC, MARK_POSITION                 ; 1855
                             50          E8      AA  D0 00676          MOVL     DISPLAY_BLOCK, R0                        ; 1856
           3F      0149      C0                  01  E1 0067A          BBC      #1, 329(R0), 67$                         ;
                             52                  01  D0 00680          MOVL     #1, J                                    ; 1859
                                                 6A  B5 00683 64$:     TSTW     LINE_DESC                                ; 1862
                                                 09  13 00685          BEQL     65$                                      ;
                   0000'     CF                  9F 00687              PUSHAB   P.AFW                                    ;
                                                 7E  D4 0068B          CLRL     -(SP)                                    ;
                             6B                  02  FB 0068D          CALLS    #2, DIR$APPEND                           ;
                                                 6A  B5 00690 65$:     TSTW     LINE_DESC                                ; 1863
                                                 09  12 00692          BNEQ     66$                                      ;
                   0000'     CF                  9F 00694              PUSHAB   P.AFY                                    ;
                                                 7E  D4 00698          CLRL     -(SP)                                    ;
                             6B                  02  FB 0069A          CALLS    #2, DIR$APPEND                           ;
               00000000G     8F                  DD 0069D 66$:         PUSHL    #DIR$_FILATRNOBAK                        ; 1864
                             6B                  01  FB 006A3          CALLS    #1, DIR$APPEND                           ;
  07E0   CA          6A      10                  00  ED 006A6          CMPZV    #0, #16, LINE_DESC, DISPLAY_WIDTH        ; 1865
                                                 10  15 006AD          BLEQ     67$                                      ;
```

```
                                   6A          57  B0 006AF          MOVW    MARK_POSITION, LINE_DESC                            ; 1868
                                               5A  DD 006B2          PUSHL   R10                                                 ; 1869
                                               7E  D4 006B4          CLRL    -(SP)                                               ;
                          0000G    CF          02  FB 006B6          CALLS   #2, DIR$OUTPUT                                      ;
                   C4              52          02  F3 006BB          AOBLEQ  #2, J, 64$                                          ; 1859
                                   57          6A  3C 006BF  67$:    MOVZWL  LINE_DESC, MARK_POSITION                            ; 1874
                                   50     E8   AA  D0 006C2          MOVL    DISPLAY_BLOCK, R0                                   ; 1875
                   3F     0149     C0          02  E1 006C6          BBC     #2, 329(R0), 71$                                    ;
                                   52          01  D0 006CC          MOVL    #1, J                                               ; 1878
                                               6A  B5 006CF  68$:    TSTW    LINE_DESC                                           ; 1881
                                               09  13 006D1          BEQL    69$                                                 ;
                                      0000'    CF  9F 006D3          PUSHAB  P.AGA                                               ;
                                               7E  D4 006D7          CLRL    -(SP)                                               ;
                                   6B          02  FB 006D9          CALLS   #2, DIR$APPEND                                      ;
                                               6A  B5 006DC  69$:    TSTW    LINE_DESC                                           ; 1882
                                               09  12 006DE          BNEQ    70$                                                 ;
                                      0000'    CF  9F 006E0          PUSHAB  P.AGC                                               ;
                                               7E  D4 006E4          CLRL    -(SP)                                               ;
                                   6B          02  FB 006E6          CALLS   #2, DIR$APPEND                                      ;
                                   00000000G   8F  DD 006E9  70$:    PUSHL   #DIR$_FILATRWRBAK                                   ; 1883
                                   6B          01  FB 006EF          CALLS   #1, DIR$APPEND                                      ;
    07E0     CA                    6A          10  00  ED 006F2      CMPZV   #0, #16, LINE_DESC, DISPLAY_WIDTH                   ; 1884
                                               10  15 006F9          BLEQ    71$                                                 ;
                                   6A          57  B0 006FB          MOVW    MARK_POSITION, LINE_DESC                            ; 1887
                                               5A  DD 006FE          PUSHL   R10                                                 ; 1888
                                               7E  D4 00700          CLRL    -(SP)                                               ;
                          0000G    CF          02  FB 00702          CALLS   #2, DIR$OUTPUT                                      ;
                   C4              52          02  F3 00707          AOBLEQ  #2, J, 68$                                          ; 1878
                                   57          6A  3C 0070B  71$:    MOVZWL  LINE_DESC, MARK_POSITION                            ; 1893
                                   50     E8   AA  D0 0070E          MOVL    DISPLAY_BLOCK, R0                                   ; 1894
                   3F     0149     C0          03  E1 00712          BBC     #3, 329(R0), 75$                                    ;
                                   52          01  D0 00718          MOVL    #1, J                                               ; 1897
                                               6A  B5 0071B  72$:    TSTW    LINE_DESC                                           ; 1900
                                               09  13 0071D          BEQL    73$                                                 ;
                                      0000'    CF  9F 0071F          PUSHAB  P.AGE                                               ;
                                               7E  D4 00723          CLRL    -(SP)                                               ;
                                   6B          02  FB 00725          CALLS   #2, DIR$APPEND                                      ;
                                               6A  B5 00728  73$:    TSTW    LINE_DESC                                           ; 1901
                                               09  12 0072A          BNEQ    74$                                                 ;
                                      0000'    CF  9F 0072C          PUSHAB  P.AGG                                               ;
                                               7E  D4 00730          CLRL    -(SP)                                               ;
                                   6B          02  FB 00732          CALLS   #2, DIR$APPEND                                      ;
                                   00000000G   8F  DD 00735  74$:    PUSHL   #DIR$_FILATRRDCHK                                   ; 1902
                                   6B          01  FB 0073B          CALLS   #1, DIR$APPEND                                      ;
    07E0     CA                    6A          10  00  ED 0073E      CMPZV   #0, #16, LINE_DESC, DISPLAY_WIDTH                   ; 1903
                                               10  15 00745          BLEQ    75$                                                 ;
                                   6A          57  B0 00747          MOVW    MARK_POSITION, LINE_DESC                            ; 1906
                                               5A  DD 0074A          PUSHL   R10                                                 ; 1907
                                               7E  D4 0074C          CLRL    -(SP)                                               ;
                          0000G    CF          02  FB 0074E          CALLS   #2, DIR$OUTPUT                                      ;
                   C4              52          02  F3 00753          AOBLEQ  #2, J, 72$                                          ; 1897
                                   57          6A  3C 00757  75$:    MOVZWL  LINE_DESC, MARK_POSITION                            ; 1912
                                   50     E8   AA  D0 0075A          MOVL    DISPLAY_BLOCK, R0                                   ; 1913
                   3F     0149     C0          04  E1 0075E          BBC     #4, 329(R0), 79$                                    ;
                                   52          01  D0 00764          MOVL    #1, J                                               ; 1916
                                               6A  B5 00767  76$:    TSTW    LINE_DESC                                           ; 1919
                                               09  13 00769          BEQL    77$                                                 ;
```

```
                                0000'   CF  9F 0076B        PUSHAB  P.AGI                                      ;
                                        7E  D4 0076F        CLRL    -(SP)                                      ;
                         6B             02  FB 00771        CALLS   #2, DIR$APPEND                             ;
                                        6A  B5 00774 77$:   TSTW    LINE_DESC                                  ; 1920
                                        09  12 00776        BNEQ    78$                                        ;
                                0000'   CF  9F 00778        PUSHAB  P.AGK                                      ;
                                        7E  D4 0077C        CLRL    -(SP)                                      ;
                         6B             02  FB 0077E        CALLS   #2, DIR$APPEND                             ;
                            00000000G   8F  DD 00781 78$:   PUSHL   #DIR$_FILATRWRCHK                          ; 1921
                         6B             01  FB 00787        CALLS   #1, DIR$APPEND                             ;
   07E0   CA             6A             10  00  ED 0078A    CMPZV   #0, #16, LINE_DESC, DISPLAY_WIDTH          ; 1922
                                        10  15 00791        BLEQ    79$                                        ;
                         6A             57  B0 00793        MOVW    MARK_POSITION, LINE_DESC                   ; 1925
                                        5A  DD 00796        PUSHL   R10                                        ; 1926
                                        7E  D4 00798        CLRL    -(SP)                                      ;
                    0000G  CF           02  FB 0079A        CALLS   #2, DIR$OUTPUT                             ;
                  C4         52         02  F3 0079F        AOBLEQ  #2, J, 76$                                 ; 1916
                             57         6A  3C 007A3 79$:   MOVZWL  LINE_DESC, MARK_POSITION                   ; 1931
                             50     E8  AA  D0 007A6        MOVL    DISPLAY_BLOCK, R0                          ; 1932
                  3F  014A   C0         03  E1 007AA        BBC     #3, 330(R0), 83$                           ;
                             52         01  D0 007B0        MOVL    #1, J                                      ; 1935
                                        6A  B5 007B3 80$:   TSTW    LINE_DESC                                  ; 1938
                                        09  13 007B5        BEQL    81$                                        ;
                                0000'   CF  9F 007B7        PUSHAB  P.AGM                                      ;
                                        7E  D4 007BB        CLRL    -(SP)                                      ;
                         6B             02  FB 007BD        CALLS   #2, DIR$APPEND                             ;
                                        6A  B5 007C0 81$:   TSTW    LINE_DESC                                  ; 1939
                                        09  12 007C2        BNEQ    82$                                        ;
                                0000'   CF  9F 007C4        PUSHAB  P.AGO                                      ;
                                        7E  D4 007C8        CLRL    -(SP)                                      ;
                         6B             02  FB 007CA        CALLS   #2, DIR$APPEND                             ;
                            00000000G   8F  DD 007CD 82$:   PUSHL   #DIR$_FILATRBADACL                         ; 1940
                         6B             01  FB 007D3        CALLS   #1, DIR$APPEND                             ;
   07E0   CA             6A             10  00  ED 007D6    CMPZV   #0, #16, LINE_DESC, DISPLAY_WIDTH          ; 1941
                                        10  15 007DD        BLEQ    83$                                        ;
                         6A             57  B0 007DF        MOVW    MARK_POSITION, LINE_DESC                   ; 1944
                                        5A  DD 007E2        PUSHL   R10                                        ; 1945
                                        7E  D4 007E4        CLRL    -(SP)                                      ;
                    0000G  CF           02  FB 007E6        CALLS   #2, DIR$OUTPUT                             ;
                  C4         52         02  F3 007EB        AOBLEQ  #2, J, 80$                                 ; 1935
                             57         6A  3C 007EF 83$:   MOVZWL  LINE_DESC, MARK_POSITION                   ; 1950
                             50     E8  AA  D0 007F2        MOVL    DISPLAY_BLOCK, R0                          ; 1951
                  3F  014A   C0         05  E1 007F6        BBC     #5, 330(R0), 87$                           ;
                             52         01  D0 007FC        MOVL    #1, J                                      ; 1954
                                        6A  B5 007FF 84$:   TSTW    LINE_DESC                                  ; 1957
                                        09  13 00801        BEQL    85$                                        ;
                                0000'   CF  9F 00803        PUSHAB  P.AGQ                                      ;
                                        7E  D4 00807        CLRL    -(SP)                                      ;
                         6B             02  FB 00809        CALLS   #2, DIR$APPEND                             ;
                                        6A  B5 0080C 85$:   TSTW    LINE_DESC                                  ; 1958
                                        09  12 0080E        BNEQ    86$                                        ;
                                0000'   CF  9F 00810        PUSHAB  P.AGS                                      ;
                                        7E  D4 00814        CLRL    -(SP)                                      ;
                         6B             02  FB 00816        CALLS   #2, DIR$APPEND                             ;
                            00000000G   8F  DD 00819 86$:   PUSHL   #DIR$_FILATRDIR                            ; 1959
                         6B             01  FB 0081F        CALLS   #1, DIR$APPEND                             ;
   07E0   CA             6A             10  00  ED 00822    CMPZV   #0, #16, LINE_DESC, DISPLAY_WIDTH          ; 1960
```

```
                                             10 15 00829          BLEQ    87$                                   ;
                              6A             57 B0 0082B          MOVW    MARK_POSITION, LINE_DESC              ; 1963
                                             5A DD 0082E          PUSHL   R10                                   ; 1964
                                             7E D4 00830          CLRL    -(SP)                                 ;
                       0000G  CF             02 FB 00832          CALLS   #2, DIR$OUTPUT                        ;
                 C4           52             02 F3 00837          AOBLEQ  #2, J, 84$                            ; 1954
                              57             6A 3C 0083B 87$:     MOVZWL  LINE_DESC, MARK_POSITION              ; 1969
                              50         E8  AA D0 0083E          MOVL    DISPLAY_BLOCK, R0                     ; 1970
                 3F    014A   C0             06 E1 00842          BBC     #6, 330(R0), 91$                      ;
                              52             01 D0 00848          MOVL    #1, J                                 ; 1973
                                             6A B5 0084B 88$:     TSTW    LINE_DESC                             ; 1976
                                             09 13 0084D          BEQL    89$                                   ;
                                      0000'  CF 9F 0084F          PUSHAB  P.AGU                                 ;
                                             7E D4 00853          CLRL    -(SP)                                 ;
                              6B             02 FB 00855          CALLS   #2, DIR$APPEND                        ;
                                             6A B5 00858 89$:     TSTW    LINE_DESC                             ; 1977
                                             09 12 0085A          BNEQ    90$                                   ;
                                      0000'  CF 9F 0085C          PUSHAB  P.AGW                                 ;
                                             7E D4 00860          CLRL    -(SP)                                 ;
                              6B             02 FB 00862          CALLS   #2, DIR$APPEND                        ;
                                  00000000G  8F DD 00865 90$:     PUSHL   #DIR$_FILATRBADBLK                    ; 1978
                              6B             01 FB 0086B          CALLS   #1, DIR$APPEND                        ;
07E0   CA        6A           10             00 ED 0086E          CMPZV   #0, #16, LINE_DESC, DISPLAY_WIDTH     ; 1979
                                             10 15 00875          BLEQ    91$                                   ;
                              6A             57 B0 00877          MOVW    MARK_POSITION, LINE_DESC              ; 1982
                                             5A DD 0087A          PUSHL   R10                                   ; 1983
                                             7E D4 0087C          CLRL    -(SP)                                 ;
                       0000G  CF             02 FB 0087E          CALLS   #2, DIR$OUTPUT                        ;
                 C4           52             02 F3 00883          AOBLEQ  #2, J, 88$                            ; 1973
                              57             6A 3C 00887 91$:     MOVZWL  LINE_DESC, MARK_POSITION              ; 1988
                              50         E8  AA D0 0088A          MOVL    DISPLAY_BLOCK, R0                     ; 1989
                              3F       014B  C0 E9 0088E          BLBC    331(R0), 95$                          ;
                              52             01 D0 00893          MOVL    #1, J                                 ; 1992
                                             6A B5 00896 92$:     TSTW    LINE_DESC                             ; 1995
                                             09 13 00898          BEQL    93$                                   ;
                                      0000'  CF 9F 0089A          PUSHAB  P.AGY                                 ;
                                             7E D4 0089E          CLRL    -(SP)                                 ;
                              6B             02 FB 008A0          CALLS   #2, DIR$APPEND                        ;
                                             6A B5 008A3 93$:     TSTW    LINE_DESC                             ; 1996
                                             09 12 008A5          BNEQ    94$                                   ;
                                      0000'  CF 9F 008A7          PUSHAB  P.AHA                                 ;
                                             7E D4 008AB          CLRL    -(SP)                                 ;
                              6B             02 FB 008AD          CALLS   #2, DIR$APPEND                        ;
                                  00000000G  8F DD 008B0 94$:     PUSHL   #DIR$_FILATRNOCHRG                    ; 1997
                              6B             01 FB 008B6          CALLS   #1, DIR$APPEND                        ;
07E0   CA        6A           10             00 ED 008B9          CMPZV   #0, #16, LINE_DESC, DISPLAY_WIDTH     ; 1998
                                             10 15 008C0          BLEQ    95$                                   ;
                              6A             57 B0 008C2          MOVW    MARK_POSITION, LINE_DESC              ; 2001
                                             5A DD 008C5          PUSHL   R10                                   ; 2002
                                             7E D4 008C7          CLRL    -(SP)                                 ;
                       0000G  CF             02 FB 008C9          CALLS   #2, DIR$OUTPUT                        ;
                 C4           52             02 F3 008CE          AOBLEQ  #2, J, 92$                            ; 1992
                              57             6A 3C 008D2 95$:     MOVZWL  LINE_DESC, MARK_POSITION              ; 2007
                              50         E8  AA D0 008D5          MOVL    DISPLAY_BLOCK, R0                     ; 2008
                 3F    014B   C0             01 E1 008D9          BBC     #1, 331(R0), 99$                      ;
                              52             01 D0 008DF          MOVL    #1, J                                 ; 2011
                                             6A B5 008E2 96$:     TSTW    LINE_DESC                             ; 2014
```

```
                                         09  13 008E4          BEQL     97$                                     :
                              0000'      CF  9F 008E6          PUSHAB   P.AHC                                   :
                                         7E  D4 008EA          CLRL     -(SP)                                   :
                      6B                 02  FB 008EC          CALLS    #2, DIR$APPEND                          :
                                         6A  B5 008EF 97$:     TSTW     LINE_DESC                               : 2015
                                         09  12 008F1          BNEQ     98$                                     :
                              0000'      CF  9F 008F3          PUSHAB   P.AHE                                   :
                                         7E  D4 008F7          CLRL     -(SP)                                   :
                      6B                 02  FB 008F9          CALLS    #2, DIR$APPEND                          :
                          00000000G      8F  DD 008FC 98$:     PUSHL    #DIR$_FILATRERASE                       : 2016
                      6B                 01  FB 00902          CALLS    #1, DIR$APPEND                          :
    07E0   CA         6A  10             00  ED 00905          CMPZV    #0, #16, LINE_DESC, DISPLAY_WIDTH       : 2017
                                         10  15 0090C          BLEQ     99$                                     :
                      6A                 57  B0 0090E          MOVW     MARK_POSITION, LINE_DESC                : 2020
                                         5A  DD 00911          PUSHL    R10                                     : 2021
                                         7E  D4 00913          CLRL     -(SP)                                   :
                 0000G  CF               02  FB 00915          CALLS    #2, DIR$OUTPUT                          :
              C4        52               02  F3 0091A          AOBLEQ   #2, J, 96$                              : 2011
                                         6A  B5 0091E 99$:     TSTW     LINE_DESC                               : 2026
                                         09  13 00920          BEQL     100$                                    :
                                         5A  DD 00922          PUSHL    R10                                     :
                                         7E  D4 00924          CLRL     -(SP)                                   :
                 0000G  CF               02  FB 00926          CALLS    #2, DIR$OUTPUT                          :
                          00000000G      8F  DD 0092B 100$:    PUSHL    #DIR$_RECFORMAT                         : 2028
                      6B                 01  FB 00931          CALLS    #1, DIR$APPEND                          :
                      52         E8      AA  D0 00934          MOVL     DISPLAY_BLOCK, R2                       : 2029
      53   0129  C2   04                 00  EF 00938          EXTZV    #0, #4, 297(R2), R3                     :
                      01                 53  D1 0093F          CMPL     R3, #1                                  : 2030
                                         11  12 00942          BNEQ     101$                                    :
                      7E       012B      C2  3C 00944          MOVZWL   299(R2), -(SP)                          :
                               0000'     CF  9F 00949          PUSHAB   P.AHG                                   :
                          00000000G      8F  DD 0094D          PUSHL    #DIR$_RECFMTFIX                         :
                                         65  11 00953          BRB      109$                                    :
                      02                 53  D1 00955 101$:    CMPL     R3, #2                                  : 2031
                                         08  12 00958          BNEQ     102$                                    :
                          00000000G      8F  DD 0095A          PUSHL    #DIR$_RECFMTVAR                         :
                                         47  11 00960          BRB      107$                                    :
                      03                 53  D1 00962 102$:    CMPL     R3, #3                                  : 2032
                                         11  12 00965          BNEQ     103$                                    :
                      7E       0138      C2  9A 00967          MOVZBL   312(R2), -(SP)                          :
                               0000'     CF  9F 0096C          PUSHAB   P.AHI                                   :
                          00000000G      8F  DD 00970          PUSHL    #DIR$_RECFMTVFC                         :
                                         42  11 00976          BRB      109$                                    :
                                         53  D5 00978 103$:    TSTL     R3                                      : 2033
                                         08  12 0097A          BNEQ     104$                                    :
                          00000000G      8F  DD 0097C          PUSHL    #DIR$_RECFMTUDF                         :
                                         25  11 00982          BRB      107$                                    :
                      04                 53  D1 00984 104$:    CMPL     R3, #4                                  : 2034
                                         08  12 00987          BNEQ     105$                                    :
                          00000000G      8F  DD 00989          PUSHL    #DIR$_RECFMTSTM                         :
                                         18  11 0098F          BRB      107$                                    :
                      05                 53  D1 00991 105$:    CMPL     R3, #5                                  : 2035
                                         08  12 00994          BNEQ     106$                                    :
                          00000000G      8F  DD 00996          PUSHL    #DIR$_RECFMTSTMLF                       :
                                         0B  11 0099C          BRB      107$                                    :
                      06                 53  D1 0099E 106$:    CMPL     R3, #6                                  : 2036
                                         0B  12 009A1          BNEQ     108$                                    :
```

```
                                     00000000G  8F  DD 009A3          PUSHL   #DIR$_RECFMTSTMCR
                                6B              01  FB 009A9  107$:   CALLS   #1, DIR$APPEND
                                                0F  11 009AC          BRB     110$
                                                53  DD 009AE  108$:   PUSHL   R3                                      ; 2037
                                         0000'  CF  9F 009B0          PUSHAB  P.AHK
                                     00000000G  8F  DD 009B4          PUSHL   #DIR$_RECFMTUNK
                                6B              03  FB 009BA  109$:   CALLS   #3, DIR$APPEND
                                50          E8  AA  D0 009BD  110$:   MOVL    DISPLAY_BLOCK, R0                       ; 2039
        01      0129    C0              04      00  ED 009C1          CMPZV   #0, #4, 297(R0), #1
                                                18  13 009C8          BEQL    111$
                                          012B  C0  B5 009CA          TSTW    299(R0)                                 ; 2040
                                                12  13 009CE          BEQL    111$
                                7E        012B  C0  3C 009D0          MOVZWL  299(R0), -(SP)                          ; 2041
                                         0000'  CF  9F 009D5          PUSHAB  P.AHM
                                     00000000G  8F  DD 009D9          PUSHL   #DIR$_MAXRECSIZ
                                6B              03  FB 009DF          CALLS   #3, DIR$APPEND
                                                5A  DD 009E2  111$:   PUSHL   R10                                     ; 2042
                                                7E  D4 009E4          CLRL    -(SP)
                        0000G   CF              02  FB 009E6          CALLS   #2, DIR$OUTPUT
                                     00000000G  8F  DD 009EB          PUSHL   #DIR$_RECATTR                           ; 2044
                                6B              01  FB 009F1          CALLS   #1, DIR$APPEND
                                50          E8  AA  D0 009F4          MOVL    DISPLAY_BLOCK, R0                       ; 2045
                                52        012A  C0  9E 009F8          MOVAB   298(R0), R2
                                                62  95 009FD          TSTB    (R2)
                                                08  12 009FF          BNEQ    112$
                                     00000000G  8F  DD 00A01          PUSHL   #DIR$_NORECATTR                         ; 2046
                                                4F  11 00A07          BRB     118$
                                57              6A  3C 00A09  112$:   MOVZWL  LINE_DESC, MARK_POSITION                ; 2049
                08                      62      01  E1 00A0C          BBC     #1, (R2), 113$                          ; 2050
                                     00000000G  8F  DD 00A10          PUSHL   #DIR$_CRCARCTL                          ; 2051
                                                1D  11 00A16          BRB     116$
                08                              62  E9 00A18  113$:   BLBC    (R2), 114$                              ; 2052
                                     00000000G  8F  DD 00A1B          PUSHL   #DIR$_FTNCARCTL                         ; 2053
                                                12  11 0CA21          BRB     116$
                08                      62      02  E1 00A23  114$:   BBC     #2, (R2), 115$                          ; 2054
                                     00000000G  8F  DD 00A27          PUSHL   #DIR$_PRICARCTL                         ; 2055
                                                06  11 00A2D          BRB     116$
                                     00000000G  8F  DD 00A2F  115$:   PUSHL   #DIR$_NOCARCTL                          ; 2056
                                6B              01  FB 00A35  116$:   CALLS   #1, DIR$APPEND
                                50          E8  AA  D0 00A38          MOVL    DISPLAY_BLOCK, R0                       ; 2057
                19      012A    C0              03  E1 00A3C          BBC     #3, 298(R0), 119$
        57              6A      10              00  ED 00A42          CMPZV   #0, #16, LINE_DESC, MARK_POSITION       ; 2060
                                                09  13 00A47          BEQL    117$
                                         0000'  CF  9F 00A49          PUSHAB  P.AHO
                                                7E  D4 00A4D          CLRL    -(SP)
                                6B              02  FB 00A4F          CALLS   #2, DIR$APPEND
                                     00000000G  8F  DD 00A52  117$:   PUSHL   #DIR$_NOSPAN                            ; 2061
                                6B              01  FB 00A58  118$:   CALLS   #1, DIR$APPEND
                                                5A  DD 00A5B  119$:   PUSHL   R10                                     ; 2064
                                                7E  D4 00A5D          CLRL    -(SP)
                        0000G   CF              02  FB 00A5F          CALLS   #2, DIR$OUTPUT
                                03       0000'  CF  E8 00A64          BLBS    JOURNAL_FLAG, 120$                      ; 2066
                                          0127  31 00A69              BRW     134$
                                     00000000G  8F  DD 00A6C  120$:   PUSHL   #DIR$_JNLENABLED                        ; 2069
                                6B              01  FB 00A72          CALLS   #1, DIR$APPEND
                                50          E8  AA  D0 00A75          MOVL    DISPLAY_BLOCK, R0                       ; 2070
                                52        0154  C0  9E 00A79          MOVAB   340(R0), R2
```

```
                                   62  B5 00A7E        TSTW    (R2)                                  :
                                   0B  12 00A80        BNEQ    121$                                  :
                         00000000G 8F  DD 00A82        PUSHL   #DIR$_NOJNLENB                        : 2071
                    6B             01  FB 00A88        CALLS   #1, DIR$APPEND                        :
                                   6D  11 00A8B        BRB     128$                                  :
 09                 62             03  E1 00A8D 121$:  BBC     #3, (R2), 122$                        : 2074
                             0000' CF  9F 00A91        PUSHAB  P.AHQ                                 :
                                   7E  D4 00A95        CLRL    -(SP)                                 :
                    6B             02  FB 00A97        CALLS   #2, DIR$APPEND                        :
                    50          E8 AA  D0 00A9A 122$:  MOVL    DISPLAY_BLOCK, R0                     : 2075
 09         0154    C0             02  E1 00A9E        BBC     #2, 340(R0), 123$                     :
                             0000' CF  9F 00AA4        PUSHAB  P.AHS                                 :
                                   7E  D4 00AA8        CLRL    -(SP)                                 :
                    6B             02  FB 00AAA        CALLS   #2, DIR$APPEND                        :
                    50          E8 AA  D0 00AAD 123$:  MOVL    DISPLAY_BLOCK, R0                     : 2076
 09         0154    C0             04  E1 00AB1        BBC     #4, 340(R0), 124$                     :
                             0000' CF  9F 00AB7        PUSHAB  P.AHU                                 :
                                   7E  D4 00ABB        CLRL    -(SP)                                 :
                    6B             02  FB 00ABD        CALLS   #2, DIR$APPEND                        :
                    50          E8 AA  D0 00AC0 124$:  MOVL    DISPLAY_BLOCK, R0                     : 2077
 09         0154    C0             01  E1 00AC4        BBC     #1, 340(R0), 125$                     :
                             0000' CF  9F 00ACA        PUSHAB  P.AHW                                 :
                                   7E  D4 00ACE        CLRL    -(SP)                                 :
                    6B             02  FB 00AD0        CALLS   #2, DIR$APPEND                        :
                    50          E8 AA  D0 00AD3 125$:  MOVL    DISPLAY_BLOCK, R0                     : 2078
                    09        0154 C0  E9 00AD7        BLBC    340(R0), 126$                         :
                             0000' CF  9F 00ADC        PUSHAB  P.AHY                                 :
                                   7E  D4 00AE0        CLRL    -(SP)                                 :
                    6B             02  FB 00AE2        CALLS   #2, DIR$APPEND                        :
                    50          E8 AA  D0 00AE5 126$:  MOVL    DISPLAY_BLOCK, R0                     : 2079
 09         0154    C0             05  E1 00AE9        BBC     #5, 340(R0), 127$                     :
                             0000' CF  9F 00AEF        PUSHAB  P.AIA                                 :
                                   7E  D4 00AF3        CLRL    -(SP)                                 :
                    6B             02  FB 00AF5        CALLS   #2, DIR$APPEND                        :
                                   6A  B7 00AF8 127$:  DECW    LINE_DESC                             : 2080
                                   5A  DD 00AFA 128$:  PUSHL   R10                                   : 2082
                                   7E  D4 00AFC        CLRL    -(SP)                                 :
            0000G   CF             02  FB 00AFE        CALLS   #2, DIR$OUTPUT                        :
                    50          E8 AA  D0 00B03        MOVL    DISPLAY_BLOCK, R0                     : 2083
                              01A9 C0  95 00B07        TSTB    425(R0)                               :
                                   15  13 00B0B        BEQL    129$                                  :
                              01A9 C0  9F 00B0D        PUSHAB  425(R0)                               : 2084
                             0000' CF  9F 00B11        PUSHAB  P.AIC                                 :
                         00000000G 8F  DD 00B15        PUSHL   #DIR$_BIJNLNAME                       :
            0000G   CF             03  FB 00B1B        CALLS   #3, DIR$OUTPUT                        :
                                   11  11 00B20        BRB     130$                                  :
 0B         0154    C0             02  E1 00B22 129$:  BBC     #2, 340(R0), 130$                     : 2085
                         00000000G 8F  DD 00B28        PUSHL   #DIR$_NOBIJNL                         : 2086
            0000G   CF             01  FB 00B2E        CALLS   #1, DIR$OUTPUT                        :
                    50          E8 AA  D0 00B33 130$:  MOVL    DISPLAY_BLOCK, R0                     : 2087
                              0198 C0  95 00B37        TSTB    408(R0)                               :
                                   15  13 00B3B        BEQL    131$                                  :
                              0198 C0  9F 00B3D        PUSHAB  408(R0)                               : 2088
                             0000' CF  9F 00B41        PUSHAB  P.AIE                                 :
                         00000000G 8F  DD 00B45        PUSHL   #DIR$_AIJNLNAME                       :
            0000G   CF             03  FB 00B4B        CALLS   #3, DIR$OUTPUT                        :
                                   11  11 00B50        BRB     132$                                  :
                                    08      0154    C0             03  E1 00B52 131$:   BBC     #3, 340(R0), 132$                          ; 2089
                                                         00000000G 8F  DD 00B58         PUSHL   #DIR$_NOAIJNL                              ; 2090
                                           0000G    CF             01  FB 00B5E         CALLS   #1, DIR$OUTPUT                             ;
                                                    50          E8 AA  D0 00B63 132$:   MOVL    DISPLAY_BLOCK, R0                          ; 2091
                                                              01BA C0  95 00B67         TSTB    442(R0)                                    ;
                                                                   15  13 00B6B         BEQL    133$                                       ;
                                                              01BA C0  9F 00B6D         PUSHAB  442(R0)                                    ; 2092
                                                             0000' CF  9F 00B71         PUSHAB  P.AIG                                      ;
                                                         00000000G 8F  DD 00B75         PUSHL   #DIR$_ATJNLNAME                            ;
                                           0000G    CF             03  FB 00B7B         CALLS   #3, DIR$OUTPUT                             ;
                                                                   11  11 00B80         BRB     134$                                       ;
                                    08      0154    C0             04  E1 00B82 133$:   BBC     #4, 340(R0), 134$                          ; 2093
                                                         00000000G 8F  DD 00B88         PUSHL   #DIR$_NOATJNL                              ; 2094
                                           0000G    CF             01  FB 00B8E         CALLS   #1, DIR$OUTPUT                             ;
                                                         00000000G 8F  DD 00B93 134$:   PUSHL   #DIR$_FILEPROT                             ; 2097
                                                    6B             01  FB 00B99         CALLS   #1, DIR$APPEND                             ;
                                                                   52  D4 00B9C         CLRL    J                                          ; 2098
                                                                   08  12 00B9E 135$:   BNEQ    136$                                       ; 2103
                                                         00000000G 8F  DD 00BA0         PUSHL   #DIR$_SYSPROT                              ;
                                                                   25  11 00BA6         BRB     139$                                       ;
                                                    01             52  D1 00BA8 136$:   CMPL    J, #1                                      ; 2104
                                                                   08  12 00BAB         BNEQ    137$                                       ;
                                                         00000000G 8F  DD 00BAD         PUSHL   #DIR$_OWNPROT                              ;
                                                                   18  11 00BB3         BRB     139$                                       ;
                                                    02             52  D1 00BB5 137$:   CMPL    J, #2                                      ; 2105
                                                                   08  12 00BB8         BNEQ    138$                                       ;
                                                         00000000G 8F  DD 00BBA         PUSHL   #DIR$_GRPPROT                              ;
                                                                   0B  11 00BC0         BRB     139$                                       ;
                                                    03             52  D1 00BC2 138$:   CMPL    J, #3                                      ; 2106
                                                                   09  12 00BC5         BNEQ    140$                                       ;
                                                         00000000G 8F  DD 00BC7         PUSHL   #DIR$_WORPROT                              ;
                                                    6B             01  FB 00BCD 139$:   CALLS   #1, DIR$APPEND                             ;
                                                    50          E8 AA  D0 00BD0 140$:   MOVL    DISPLAY_BLOCK, R0                          ; 2108
                                                    53        0152 C0  9E 00BD4         MOVAB   338(R0), R3                                ;
                                    51                      52     02  78 00BD9         ASHL    #2, J, R1                                  ;
                  50                63                      04     51  EF 00BDD         EXTZV   R1, #4, (R3), R0                           ;
                                                              0000'CF40  DD 00BE2         PUSHL   PROT_TABLE[R0]                             ;
                                                                   7E  D4 00BE7         CLRL    -(SP)                                      ;
                                                    6B             02  FB 00BE9         CALLS   #2, DIR$APPEND                             ;
                                    AE              52             03  F3 00BEC         AOBLEQ  #3, J, 135$                                ; 2098
                                                                   5A  DD 00BF0         PUSHL   R10                                        ; 2110
                                                                   7E  D4 00BF2         CLRL    -(SP)                                      ;
                                           0000G    CF             02  FB 00BF4         CALLS   #2, DIR$OUTPUT                             ;
                                                              07FE CA  D5 00BF9         TSTL    ACL_LENGTH                                 ; 2112
                                                                   07  15 00BFD         BLEQ    141$                                       ;
                                           0000V    CF             00  FB 00BFF         CALLS   #0, DIR$SHOW_ACL                           ; 2113
                                                                   0B  11 00C04         BRB     142$                                       ;
                                                         00000000G 8F  DD 00C06 141$:   PUSHL   #DIR$_NOFILEACL                            ; 2114
                                           0000G    CF             01  FB 00C0C         CALLS   #1, DIR$OUTPUT                             ;
                                                    50             01  D0 00C11 142$:   MOVL    #1, R0                                     ; 2116
                                                                       04 00C14         RET                                                ; 2118

; Routine Size:  3093 bytes,    Routine Base:  $CODE$ + 0BE4
```

```
1 ROUTINE DIR$SHOW_ACL =
1
1 !++
1 !
1 ! FUNCTIONAL DESCRIPTION:
1 !
1 !       This routine is called to display the file's ACL.  The output
1 !       format differs depending on whether or not a full directory
1 !       listing is required.
1 !
1 ! CALLING SEQUENCE:
1 !       DIR$SHOW_ACL ()
1 !
1 ! INPUT PARAMETERS:
1 !       none
1 !
1 ! IMPLICIT INPUTS:
1 !       none
1 !
1 ! OUTPUT PARAMETERS:
1 !       none
1 !
1 ! IMPLICIT OUTPUTS:
1 !       none
1 !
1 ! ROUTINE VALUE:
1 !       1
1 !
1 ! SIDE EFFECTS:
1 !       none
1 !
1 !--
1
2 BEGIN
2
2 LOCAL
2         ACL_BUFFER      : REF $BBLOCK,  ! Address of ACL storage
2         ACE_POINTER     : REF $BBLOCK,  ! Pointer to binary ACE
2         ACE_BINDESC     : $BBLOCK [8],  ! Descriptor to binary ACE
2         ACE_TXTDESC     : $BBLOCK [8],  ! Descriptor to converted ACE
2         ACE_TEXT        : $BBLOCK [3072],       ! Converted ACE text storage
2         ACL_FIBDESC     : $BBLOCK [8],  ! FIB descriptor
2         ACL_FIB         : $BBLOCK [FIB$C_LENGTH],       ! File FIB
2         ATR_DESC        : $BBLOCK [12], ! Attribute descriptor
2         STATUS,                         ! Routine exit status
2         IOSB            : VECTOR [4, WORD];     ! I/O status block
2
2 EXTERNAL ROUTINE
2         DIR$OUTPUT;                             ! General output routine
2
2 IF .DISPLAY_BLOCK[DIR_B_NODE] EQL 0
2 THEN
3     BECIN
3
3 ! Allocate a block of storage for the file's ACL.
3
3     STATUS = LIB$GET_VM (%REF (512), ACL_BUFFER);
```

```
  3      IF NOT .STATUS
  3      THEN
  4          BEGIN
  4          SIGNAL (.STATUS);
  4          RETURN .STATUS;
  3          END;
  3
  3  ! Set up the FIB to read the ACL.
  3
  3      CH$FILL (0, FIB$C_LENGTH, ACL_FIB);
  3      ACL_FIBDESC[DSC$W_LENGTH] = FIB$C_LENGTH;
  3      ACL_FIBDESC[DSC$A_POINTER] = ACL_FIB;
  3      ACL_FIB[FIB$W_FID_NUM] = .DISPLAY_BLOCK[DIR_W_FID_NUM];
  3      ACL_FIB[FIB$W_FID_SEQ] = .DISPLAY_BLOCK[DIR_W_FID_SEQ];
  3      ACL_FIB[FIB$W_FID_RVN] = .DISPLAY_BLOCK[DIR_W_FID_RVN];
  3      WHILE 1
  3      DO
  4          BEGIN
  4          CH$FILL (0, .ACL_LENGTH, .ACL_BUFFER);
  4          ATR_DESC[ATR$W_SIZE] = 512;
  4          ATR_DESC[ATR$W_TYPE] = ATR$C_READACL;
  4          ATR_DESC[ATR$L_ADDR] = .ACL_BUFFER;
  4          ATR_DESC[8,0,32,0] = 0;
  4
P 4          STATUS = $QIOW (CHAN = .CHANNEL,
P 4                          FUNC = IO$_ACCESS,
P 4                          IOSB = IOSB,
P 4                          P1 = ACL_FIBDESC,
  4                          P5 = ATR_DESC);
  4          IF .STATUS THEN STATUS = .IOSB[0];
  4          IF .STATUS THEN STATUS = .ACL_FIB[FIB$L_ACL_STATUS];
  4          IF NOT .STATUS THEN EXITLOOP;
  4          ACE_POINTER = .ACL_BUFFER;
  4          CH$FILL (0, 8, ACE_BINDESC);
  4          CH$FILL (0, 8, ACE_TXTDESC);
  4          UNTIL .ACE_POINTER[ACE$B_SIZE] EQL 0
  4             OR .ACE_POINTER GEQA ACL_BUFFER + .ACL_LENGTH
  4          DO
  5              BEGIN
  5              IF NOT .ACE_POINTER[ACE$V_HIDDEN]
  5              THEN
  6                  BEGIN
  6                  ACE_BINDESC[DSC$W_LENGTH] = .ACE_POINTER[ACE$B_SIZE];
  6                  ACE_BINDESC[DSC$A_POINTER] = .ACE_POINTER;
  6                  ACE_TXTDESC[DSC$W_LENGTH] = 3072;
  6                  ACE_TXTDESC[DSC$A_POINTER] = ACE_TEXT;
P 6                  STATUS = $FORMAT_ACL (ACLENT = ACE_BINDESC,
P 6                                        ACLLEN = ACE_TXTDESC[DSC$W_LENGTH],
P 6                                        ACLSTR = ACE_TXTDESC,
P 6                                        WIDTH = DISPLAY_WIDTH,
P 6                                        TRMDSC = $DESCRIPTOR (%CHAR (13), %CHAR(10)),
P 6                                        INDENT = %REF (IF .QUAL_FLAGS[DIR_V_QUAL_FULL]
  6                                                       THEN 20 ELSE 10));
  6                  IF NOT .STATUS
  6                  THEN
  7                      BEGIN
  7                      SIGNAL (.STATUS);
  7                          RETURN .STATUS;
  6                          END;
  6                      IF .ACE_POINTER EQL .ACL_BUFFER AND .QUAL_FLAGS[DIR_V_QUAL_FULL]
  6                      THEN
  7                          BEGIN
P 7                          $GETMSG (MSGID = DIR$_FILEACL,
P 7                                   MSGLEN = %REF (0),          ! Length is a throw-away
P 7                                   BUFADR = ACE_TXTDESC,
  7                                   FLAGS = 1);
  6                          END;
  6                      WRITE (0, '!AS', ACE_TXTDESC);
  5                      END;
  5                  ACE_POINTER = .ACE_POINTER + .ACE_POINTER[ACE$B_SIZE];
  4                  END;
  3              END;
  2          END;
  2
  2 RETURN 1;
  2
  1 END;                                          ! End of routine DIR$SHOW_ACL;


                                              .PSECT  $PLIT$,NOWRT,NOEXE,2

                         0D  00584 P.AIJ:     .ASCII  <13>                                        ;
                         0A  00585            .ASCII  <10>                                        ;
                             00586            .BLKB   2
                   00000002  00588 P.AII:     .LONG   2                                           ;
                   00000000' 0058C            .ADDRESS P.AIJ                                      ;
                 53  41  21  00590 P.AIL:     .ASCII  \!AS\                                       ;
                             00593            .BLKB   1
                   00000003  00594 P.AIK:     .LONG   3                                           ;
                   00000000' 00598            .ADDRESS P.AIL                                      ;

                                              .EXTRN  LIB$SIGNAL, SYS$FLUSH
                                              .EXTRN  SYS$WAIT, SYS$FORMAT_ACL

                                              .PSECT  $CODE$,NOWRT,2

                        0FFC 00000 DIR$SHOW_ACL:
                                              .WORD   Save R2,R3,R4,R5,R6,R7,R8,R9,R10,R11        ; 2119
       5B 00000000G   00  9E 00002            MOVAB   LIB$SIGNAL, R11                             ;
       5A 00000000G   00  9E 00009            MOVAB   SYS$WAIT, R10                               ;
       59 00000000G   00  9E 00010            MOVAB   SYS$FLUSH, R9                               ;
       58 00000000'   EF  9E 00017            MOVAB   OUTPUT_RAB, R8                              ;
       5E       F38C  CE  9E 0001E            MOVAB   -3188(SP), SP                               ;
       50       F7EC  C8  D0 00023            MOVL    DISPLAY_BLOCK, R0                           ; 2169
                0119  C0  95 00028            TSTB    281(R0)                                     ;
                      03  13 0002C            BEQL    1$                                          ;
                    0190  31 0002E            BRW     17$                                         ;
                  04  AE  9F 00031 1$:        PUSHAB  ACL_BUFFER                                  ; 2175
  04   AE       0200  8F  3C 00034            MOVZWL  #512, 4(SP)                                 ;
                  04  AE  9F 0003A            PUSHAB  4(SP)                                       ;
000000000G  00        02  FB 0003D            CALLS   #2, LIB$GET_VM                              ;
            57        50  D0 00044            MOVL    R0, STATUS                                  ;
            28        57  E8 00047            BLBS    STATUS, 4$                                  ; 2176
```

```
                                                                                M 7
DISPLAY                                                          15-Sep-1984 23:42:09    VAX-11 Bliss-32 V4.0-742              Page  78
V04-000                                                          14-Sep-1984 12:19:32    DISK$VMSMASTER:[DIR.SRC]DISPLAY.B32;1  (8)

                                                    58  DD 0004A          PUSHL    R8                                          ; 2179
                                    69              01  FB 0004C          CALLS    #1, SYS$FLUSH                               ;
                                                    58  DD 0004F          PUSHL    R8                                          ;
                                    6A              01  FB 00051          CALLS    #1, SYS$WAIT                                ;
                                                    57  DD 00054          PUSHL    STATUS                                      ;
                                    6B              01  FB 00056          CALLS    #1, LIB$SIGNAL                              ;
                                    07              57  93 00059          BITB     STATUS, #7                                  ;
                                                    03  12 0005C          BNEQ     3$                                          ;
                                                  0120  31 0005E  2$:     BRW      13$                                         ;
          50           57           03              00  EF 00061  3$:     EXTZV    #0, #3, STATUS, R0                          ;
          50     F7E4  C8           03              00  ED 00066          CMPZV    #0, #3, WORST_ERROR, R0                     ;
                                                    EF  18 0006D          BGEQ     2$                                          ;
                                                  0105  31 0006F          BRW      12$                                         ;
   0040   8F           00           6E              00  2C 00072  4$:     MOVC5    #0, (SP), #0, #64, ACL_FIB                  ; 2185
                                              1C    AE     00079                                                               ;
                              5C    AE        40    8F  9B 0007B          MOVZBW   #64, ACL_FIBDESC                            ; 2186
                              60    AE        1C    AE  9E 00080          MOVAB    ACL_FIB, ACL_FIBDESC+4                      ; 2187
                                    50      F7EC    C8  D0 00085          MOVL     DISPLAY_BLOCK, R0                           ; 2188
                              20    AE      0123    C0  D0 0008A          MOVL     291(R0), ACL_FIB+4                          ;
                              24    AE      0127    C0  B0 00090          MOVW     295(R0), ACL_FIB+8                          ; 2190
     FC   A8           00           6E              00  2C 00096  5$:     MOVC5    #0, (SP), #0, ACL_LENGTH, @ACL_BUFFER       ; 2194
                                              04    BE     0009C                                                               ;
                              10    AE  00250200    8F  D0 0009E          MOVL     #2425344, ATR_DESC                          ; 2195
                              14    AE        04    AE  D0 000A6          MOVL     ACL_BUFFER, ATR_DESC+4                      ; 2197
                                              18    AE  D4 000AB          CLRL     ATR_DESC+8                                  ; 2198
                                                    7E  D4 000AE          CLRL     -(SP)                                       ; 2204
                                              14    AE  9F 000B0          PUSHAB   ATR_DESC                                    ;
                                                    7E  7C 000B3          CLRQ     -(SP)                                       ;
                                                    7E  D4 000B5          CLRL     -(SP)                                       ;
                                              70    AE  9F 000B7          PUSHAB   ACL_FIBDESC                                 ;
                                                    7E  7C 000BA          CLRQ     -(SP)                                       ;
                                              28    AE  9F 000BC          PUSHAB   IOSB                                        ;
                                                    32  DD 000BF          PUSHL    #50                                         ;
                                            F7F0    C8  DD 000C1          PUSHL    CHANNEL                                     ;
                                                    7E  D4 000C5          CLRL     -(SP)                                       ;
                        00000000G   00              0C  FB 000C7          CALLS    #12, SYS$QIOW                               ;
                                    57              50  D0 000CE          MOVL     R0, STATUS                                  ;
                                    0B              57  E9 000D1          BLBC     STATUS, 6$                                  ; 2205
                                    57        08    AE  3C 000D4          MOVZWL   IOSB, STATUS                                ;
                                    04              57  E9 000D8          BLBC     STATUS, 6$                                  ; 2206
                                    57        50    AE  D0 000DB          MOVL     ACL_FIB+52, STATUS                          ;
                                    03              57  E8 000DF  6$:     BLBS     STATUS, 7$                                  ; 2207
                                                  00DC  31 000E2          BRW      17$                                         ;
                                    56        04    AE  D0 000E5  7$:     MOVL     ACL_BUFFER, ACE_POINTER                     ; 2208
          08           00           6E              00  2C 000E9          MOVC5    #0, (SP), #0, #8, ACE_BINDESC               ; 2209
                                              F8    AD     000EE                                                               ;
          08           00           6E              00  2C 000F0          MOVC5    #0, (SP), #0, #8, ACE_TXTDESC               ; 2210
                                              F0    AD     000F5                                                               ;
                                                    66  95 000F7  8$:     TSTB     (ACE_POINTER)                               ; 2211
                                                    9B  13 000F9          BEQL     5$                                          ;
                                    50        04    AE  9E 000FB          MOVAB    ACL_BUFFER, R0                              ; 2212
                                    50        FC    A8  C0 000FF          ADDL2    ACL_LENGTH, R0                              ;
                                    50              56  D1 00103          CMPL     ACE_POINTER, R0                             ;
                                                    8E  1E 00106          BGEQU    5$                                          ;
                       03     03    A6              02  E1 00108          BBC      #2, 3(ACE_POINTER), 9$                      ; 2215
                                                  00A8  31 0010D          BRW      16$                                         ;
                              F8    AD              66  9B 00110  9$:     MOVZBW   (ACE_POINTER), ACE_BINDESC                  ; 2218
```

```
EXE



Mod
---
LBR
DIS
CHK
CHN
LEF
REB
ERA
CHK
GET
SYS
LIB
SYS
LIB
```

```
                     FC    AD              56  D0 00114          MOVL    ACE_POINTER, ACE_BINDESC+4                      : 2219
                     F0    AD       0C00   8F  B0 00118          MOVW    #3072, ACE_TXTDESC                              : 2220
                     F4    AD         64   AE  9E 0011E          MOVAB   ACE_TEXT, ACE_TXTDESC+4                         : 2221
                                           7E  D4 00123          CLRL    -(SP)                                           : 2228
           06      F7D1    C8              01  E1 00125          BBC     #1, QUAL_FLAGS+1, 10$                           :
                     04    AE              14  D0 0012B          MOVL    #20, 4(SP)                                      :
                                           04  11 0012F          BRB     11$                                             :
                     04    AE              0A  D0 00131  10$:    MOVL    #10, 4(SP)                                      :
                                      04   AE  9F 00135  11$:    PUSHAB  4(SP)                                           :
                                   0000'   CF  9F 00138          PUSHAB  P.AII                                           :
                                      E4   A8  9F 0013C          PUSHAB  DISPLAY_WIDTH                                   :
                                      F0   AD  9F 0013F          PUSHAB  ACE_TXTDESC                                     :
                                      F0   AD  9F 00142          PUSHAB  ACE_TXTDESC                                     :
                                      F8   AD  9F 00145          PUSHAB  ACE_BINDESC                                     :
               00000000G   00              07  FB 00148          CALLS   #7, SYS$FORMAT_ACL                              :
                           57              50  D0 0014F          MOVL    R0, STATUS                                      :
                           30              57  E8 00152          BLBS    STATUS, 14$                                     : 2229
                                           58  DD 00155          PUSHL   R8                                              : 2232
                           69              01  FB 00157          CALLS   #1, SYS$FLUSH                                   :
                                           58  DD 0015A          PUSHL   R8                                              :
                           6A              01  FB 0015C          CALLS   #1, SYS$WAIT                                    :
                                           57  DD 0015F          PUSHL   STATUS                                          :
                           6B              01  FB 00161          CALLS   #1, LIB$SIGNAL                                  :
                           07              57  93 00164          BITB    STATUS, #7                                      :
                                           18  13 00167          BEQL    13$                                             :
   50              57      03              00  EF 00169          EXTZV   #0, #3, STATUS, R0                              :
   50      F7E4    C8      03              00  ED 0016E          CMPZV   #0, #3, WORST_ERROR, R0                         :
                                           0A  18 00175          BGEQ    13$                                             :
           F7E4    C8      57 10000000     8F  C9 00177  12$:    BISL3   #268435456, STATUS, WORST_ERROR                 :
                           50              57  D0 00181  13$:    MOVL    STATUS, R0                                      : 2233
                                               04 00184          RET                                                     :
                     04    AE              56  D1 00185  14$:    CMPL    ACE_POINTER, ACL_BUFFER                         : 2235
                                           1F  12 00189          BNEQ    15$                                             :
           19      F7D1    C8              01  E1 0018B          BBC     #1, QUAL_FLAGS+1, 15$                           :
                           7E              01  7D 00191          MOVQ    #1, -(SP)                                       : 2241
                                      F0   AD  9F 00194          PUSHAB  ACE_TXTDESC                                     :
                                      0C   AE  D4 00197          CLRL    12(SP)                                          :
                                      0C   AE  9F 0019A          PUSHAB  12(SP)                                          :
                              00000000G    8F  DD 0019D          PUSHL   #DIR$_FILEACL                                   :
               00000000G   00              05  FB 001A3          CALLS   #5, SYS$GETMSG                                  :
                                      F0   AD  9F 001AA  15$:    PUSHAB  ACE_TXTDESC                                     : 2243
                                   0000'   CF  9F 001AD          PUSHAB  P.AIK                                           :
                                           7E  D4 001B1          CLRL    -(SP)                                           :
                   0000G   CF              03  FB 001B3          CALLS   #3, DIR$OUTPUT                                  :
                           50              66  9A 001B8  16$:    MOVZBL  (ACE_POINTER), R0                               : 2245
                           56              50  C0 001BB          ADDL2   R0, ACE_POINTER                                 :
                                         FF36  31 001BE          BRW     8$                                              : 2211
                           50              01  D0 001C1  17$:    MOVL    #1, R0                                          : 2250
                                               04 001C4          RET                                                     : 2252

; Routine Size:  453 bytes,    Routine Base:  $CODE$ + 17F9
; 1860          2253  1 GLOBAL ROUTINE DIR$TOTAL =
; 1861          2254  1
; 1862          2255  1 !++
; 1863          2256  1 !
; 1864          2257  1 ! FUNCTIONAL DESCRIPTION:
; 1865          2258  1 !       Display the per directory total
; 1866          2259  1 !
; 1867          2260  1 ! CALLING SEQUENCE:
; 1868          2261  1 !       DIR$TOTAL ()
; 1869          2262  1 !
; 1870          2263  1 ! INPUT PARAMETERS:
; 1871          2264  1 !       none
; 1872          2265  1 !
; 1873          2266  1 ! IMPLICIT INPUTS:
; 1874          2267  1 !       none
; 1875          2268  1 ! OUTPUT PARAMETERS:
; 1876          2269  1 !       none
; 1877          2270  1 !
; 1878          2271  1 ! IMPLICIT OUTPUTS:
; 1879          2272  1 !       none
; 1880          2273  1 !
; 1881          2274  1 ! ROUTINE VALUE:
; 1882          2275  1 !       1
; 1883          2276  1 !
; 1884          2277  1 ! SIDE EFFECTS:
; 1885          2278  1 !       none
; 1886          2279  1 !
; 1887          2280  1 !--
; 1888          2281  1
; 1889          2282  2 BEGIN
; 1890          2283  2
; 1891          2284  2 EXTERNAL ROUTINE
; 1892          2285  2         DIR$OUTPUT;                             ! General output routine
; 1893          2286  2
; 1894          2287  2 IF NOT .QUAL_FLAGS[DIR_V_QUAL_GRAN]
; 1895          2288  2 AND .QUAL_FLAGS[DIR_V_QUAL_TRAI]
; 1896          2289  2 THEN
; 1897          2290  3     BEGIN
; 1898          2291  3     WRITE (0, '');
; 1899          2292  3     IF .QUAL_FLAGS[DIR_V_QUAL_SIZE] OR .QUAL_FLAGS[DIR_V_QUAL_FULL]
; 1900          2293  3     THEN
; 1901          2294  4         BEGIN
; 1902          2295  4         IF .QUAL_FLAGS[DIR_V_SIZE_ALL] OR .QUAL_FLAGS[DIR_V_QUAL_FULL]
; 1903          2296  4         THEN WRITE (DIR$_TOTSIZALL, 0, .TOTAL_FILES, .TOTAL_USED, .TOTAL_ALLOC)
; 1904        P 2297  4         ELSE WRITE (DIR$_TOTSIZ, 0, .TOTAL_FILES, (IF .QUAL_FLAGS[DIR_V_SIZE_USED]
; 1905          2298  4                                                 THEN .TOTAL_USED ELSE .TOTAL_ALLOC));
; 1906          2299  4         END
; 1907          2300  3     ELSE WRITE (DIR$_TOTNOSIZ, 0, .TOTAL_FILES);
; 1908          2301  2     END;
; 1909          2302  2 GRAND_USED = .GRAND_USED + .TOTAL_USED;
; 1910          2303  2 GRAND_ALLOC = .GRAND_ALLOC + .TOTAL_ALLOC;
; 1911          2304  2 GRAND_FILES = .GRAND_FILES + .TOTAL_FILES;
; 1912          2305  2 GRAND_DIRS = .GRAND_DIRS + 1;
; 1913          2306  2 TOTAL_USED = TOTAL_ALLOC = TOTAL_FILES = 0;
; 1914          2307  2
; 1915          2308  2 RETURN 1;
; 1916          2309  2
; 1917          2310  1 END;                                              ! End of routine DIR$TOTAL


                                                                .PSECT  $PLIT$,NOWRT,NOEXE,2

                                         0059C P.AIN:   .BLKB   0                                       ;
                                00000000  0059C P.AIM:   .LONG   0                                       ;
                                00000000' 005A0          .ADDRESS P.AIN                                  ;
                                      00  005A4 P.AIP:   .BYTE   0                                       ;
                                          005A5          .BLKB   3
                                00000001  005A8 P.AIO:   .LONG   1                                       ;
                                00000000' 005AC          .ADDRESS P.AIP                                  ;
                                      00  005B0 P.AIR:   .BYTE   0                                       ;
                                          005B1          .BLKB   3
                                00000001  005B4 P.AIQ:   .LONG   1                                       ;
                                00000000' 005B8          .ADDRESS P.AIR                                  ;
                                      00  005BC P.AIT:   .BYTE   0                                       ;
                                          005BD          .BLKB   3
                                00000001  005C0 P.AIS:   .LONG   1                                       ;
                                00000000' 005C4          .ADDRESS P.AIT                                  ;


                                                                .PSECT  $CODE$,NOWRT,2

                                  000C 00000            .ENTRY  DIR$TOTAL, Save R2,R3                    ; 2253
              53      0000G  CF   9E 00002              MOVAB   DIR$OUTPUT, R3                           ;
              52  00000000'  EF   9E 00007              MOVAB   QUAL_FLAGS, R2                           ;
   6B     01  A2             02   E0 0000E              BBS     #2, QUAL_FLAGS+1, 7$                     ; 2287
              67         03  A2   E9 00013              BLBC    QUAL_FLAGS+3, 7$                         ; 2288
                      0000'  CF   9F 00017              PUSHAB  P.AIM                                    ; 2291
                             7E   D4 0001B              CLRL    -(SP)                                    ;
              63             02   FB 0001D              CALLS   #2, DIR$OUTPUT                           ;
              50       0444  C2   D0 00020              MOVL    TOTAL_FILES, R0                          ; 2296
   05     02  A2             03   E0 00025              BBS     #3, QUAL_FLAGS+2, 1$                     ; 2292
   40     01  A2             01   E1 0002A              BBC     #1, QUAL_FLAGS+1, 6$                     ;
   05     02  A2             04   E0 0002F 1$:          BBS     #4, QUAL_FLAGS+2, 2$                     ; 2295
   16     01  A2             01   E1 00034              BBC     #1, QUAL_FLAGS+1, 3$                     ;
              7E       043C  C2   7D 00039 2$:          MOVQ    TOTAL_USED, -(SP)                        ; 2296
                             50   DD 0003E              PUSHL   R0                                       ;
                      0000'  CF   9F 00040              PUSHAB  P.AIO                                    ;
                  00000000G  8F   DD 00044              PUSHL   #DIR$_TOTSIZALL                          ;
              63             05   FB 0004A              CALLS   #5, DIR$OUTPUT                           ;
                             2F   11 0004D              BRB     7$                                       ;
   06     02  A2             06   E1 0004F 3$:          BBC     #6, QUAL_FLAGS+2, 4$                     ; 2298
                       043C  C2   DD 00054              PUSHL   TOTAL_USED                               ;
                             04   11 00058              BRB     5$                                       ;
                       0440  C2   DD 0005A 4$:          PUSHL   TOTAL_ALLOC                              ;
                             50   DD 0005E 5$:          PUSHL   R0                                       ;
                      0000'  CF   9F 00060              PUSHAB  P.AIQ                                    ;
                  00000000G  8F   DD 00064              PUSHL   #DIR$_TOTSIZ                             ;
              63             04   FB 0006A              CALLS   #4, DIR$OUTPUT                           ;
                             0F   11 0006D              BRB     7$                                       ; 2292
                             50   DD 0006F 6$:          PUSHL   R0                                       ; 2300
                      0000'  CF   9F 00071              PUSHAB  P.AIS                                    ;
                  00000000G  8F   DD 00075              PUSHL   #DIR$_TOTNOSIZ                           ;
```

```
                         63             03  FB 0007B        CALLS   #3, DIR$OUTPUT                                  ;
               0448      C2     043C    C2  C0 0007E 7$:    ADDL2   TOTAL_USED, GRAND_USED                          ; 2302
               044C      C2     0440    C2  C0 00085        ADDL2   TOTAL_ALLOC, GRAND_ALLOC                        ; 2303
               0450      C2     0444    C2  C0 0008C        ADDL2   TOTAL_FILES, GRAND_FILES                        ; 2304
                                0454    C2  D6 00093        INCL    GRAND_DIRS                                      ; 2305
                                0440    C2  7C 00097        CLRQ    TOTAL_ALLOC                                     ; 2306
                                043C    C2  D4 0009B        CLRL    TOTAL_USED                                      ;
                         50             01  D0 0009F        MOVL    #1, R0                                          ; 2308
                                            04 000A2        RET                                                     ; 2310

; Routine Size:  163 bytes,    Routine Base:  $CODE$ + 19BE
; 1919          2311  1 GLOBAL ROUTINE DIR$GRAND_TOTAL =
; 1920          2312  1
; 1921          2313  1 !++
; 1922          2314  1 !
; 1923          2315  1 ! FUNCTIONAL DESCRIPTION:
; 1924          2316  1 !       Display the overall totals
; 1925          2317  1 !
; 1926          2318  1 ! CALLING SEQUENCE:
; 1927          2319  1 !       DIR$GRAND_TOTAL ()
; 1928          2320  1 !
; 1929          2321  1 ! INPUT PARAMETERS:
; 1930          2322  1 !       none
; 1931          2323  1 !
; 1932          2324  1 ! IMPLICIT INPUTS:
; 1933          2325  1 !       none
; 1934          2326  1 ! OUTPUT PARAMETERS:
; 1935          2327  1 !       none
; 1936          2328  1 !
; 1937          2329  1 ! IMPLICIT OUTPUTS:
; 1938          2330  1 !       none
; 1939          2331  1 !
; 1940          2332  1 ! ROUTINE VALUE:
; 1941          2333  1 !       1
; 1942          2334  1 !
; 1943          2335  1 ! SIDE EFFECTS:
; 1944          2336  1 !       none
; 1945          2337  1 !
; 1946          2338  1 !--
; 1947          2339  1
; 1948          2340  2 BEGIN
; 1949          2341  2
; 1950          2342  2 EXTERNAL ROUTINE
; 1951          2343  2         DIR$OUTPUT;                             ! General output routine
; 1952          2344  2
; 1953          2345  2 IF NOT .QUAL_FLAGS[DIR_V_QUAL_TRAI] THEN RETURN 1;
; 1954          2346  2
; 1955          2347  2 WRITE (0, '');
; 1956          2348  2 IF .QUAL_FLAGS[DIR_V_QUAL_SIZE] OR .QUAL_FLAGS[DIR_V_QUAL_FULL]
; 1957          2349  2 THEN
; 1958          2350  3     BEGIN
; 1959          2351  3     IF .QUAL_FLAGS[DIR_V_SIZE_ALL] OR .QUAL_FLAGS[DIR_V_QUAL_FULL]
; 1960          2352  3     THEN
; 1961          2353  4         BEGIN
; 1962          2354  4         IF .GRAND_DIRS NEQ 1
; 1963        P 2355  4         THEN WRITE (DIR$_GTOTSIZALL, 0, .GRAND_DIRS, .GRAND_FILES,
; 1964          2356  4                                  .GRAND_USED, .GRAND_ALLOC)
; 1965        P 2357  4         ELSE WRITE (DIR$_GTOTSIZALL1, 0, .GRAND_DIRS, .GRAND_FILES,
; 1966          2358  4                                  .GRAND_USED, .GRAND_ALLOC);
; 1967          2359  4         END
; 1968          2360  3     ELSE
; 1969          2361  4         BEGIN
; 1970          2362  4         IF .GRAND_DIRS NEQ 1
; 1971        P 2363  4         THEN WRITE (DIR$_GTOTSIZ, 0, .GRAND_DIRS, .GRAND_FILES,
; 1972        P 2364  4                               (IF .QUAL_FLAGS[DIR_V_SIZE_USED]
; 1973          2365  4                                THEN .GRAND_USED ELSE .GRAND_ALLOC))
; 1974        P 2366  4         ELSE WRITE (DIR$_GTOTSIZ1, 0, .GRAND_DIRS, .GRAND_FILES,
; 1975        P 2367  4                                (IF .QUAL_FLAGS[DIR_V_SIZE_USED]
; 1976          2368  4                                  THEN .GRAND_USED ELSE .GRAND_ALLOC));
; 1977          2369  3             END;
; 1978          2370  3         END
; 1979          2371  2     ELSE
; 1980          2372  3         BEGIN
; 1981          2373  3         IF .GRAND_DIRS NEQ 1
; 1982          2374  3         THEN WRITE (DIR$_GTOTNOSIZ, 0, .GRAND_DIRS, .GRAND_FILES)
; 1983          2375  3         ELSE WRITE (DIR$_GTOTNOSIZ1, 0, .GRAND_DIRS, .GRAND_FILES);
; 1984          2376  2         END;
; 1985          2377  2
; 1986          2378  2     RETURN 1;
; 1987          2379  2
; 1988          2380  1     END;                                        ! End of routine DIR$GRAND_TOTAL


                                                                .PSECT  $PLIT$,NOWRT,NOEXE,2

                                     005C8 P.AIV:               .BLKB   0                                            ;
                           00000000  005C8 P.AIU:               .LONG   0                                            ;
                           00000000' 005CC                      .ADDRESS P.AIV                                       ;
                                 00  005D0 P.AIX:               .BYTE   0                                            ;
                                     005D1                      .BLKB   3
                           00000001  005D4 P.AIW:               .LONG   1                                            ;
                           00000000' 005D8                      .ADDRESS P.AIX                                       ;
                                 00  005DC P.AIZ:               .BYTE   0                                            ;
                                     005DD                      .BLKB   3
                           00000001  005E0 P.AIY:               .LONG   1                                            ;
                           00000000' 005E4                      .ADDRESS P.AIZ                                       ;
                                 00  005E8 P.AJB:               .BYTE   0                                            ;
                                     005E9                      .BLKB   3
                           00000001  005EC P.AJA:               .LONG   1                                            ;
                           00000000' 005F0                      .ADDRESS P.AJB                                       ;
                                 00  005F4 P.AJD:               .BYTE   0                                            ;
                                     005F5                      .BLKB   3
                           00000001  005F8 P.AJC:               .LONG   1                                            ;
                           00000000' 005FC                      .ADDRESS P.AJD                                       ;
                                 00  00600 P.AJF:               .BYTE   0                                            ;
                                     00601                      .BLKB   3
                           00000001  00604 P.AJE:               .LONG   1                                            ;
                           00000000' 00608                      .ADDRESS P.AJF                                       ;
                                 00  0060C P.AJH:               .BYTE   0                                            ;
                                     0060D                      .BLKB   3
                           00000001  00610 P.AJG:               .LONG   1                                            ;
                           00000000' 00614                      .ADDRESS P.AJH                                       ;


                                                                .PSECT  $CODE$,NOWRT,2

                                007C 00000                      .ENTRY  DIR$GRAND_TOTAL, Save R2,R3,R4,R5,R6         ; 2311
               56      0000G  CF  9E 00002                      MOVAB   DIR$OUTPUT, R6                               ;
               55      0000'  CF  9E 00007                      MOVAB   P.AIU, R5                                    ;
               54  00000000'  EF  9E 0000C                      MOVAB   QUAL_FLAGS, R4                               ;
               4F         03  A4  E9 00013                      BLBC    QUAL_FLAGS+3, 5$                             ; 2345
                              55  DD 00017                      PUSHL   R5                                           ; 2347
                              7E  D4 00019                      CLRL    -(SP)                                        ;
```

```
                    66           02 FB 0001B        CALLS   #2, DIR$OUTPUT                         ;
                    52     0454  C4 D0 0001E        MOVL    GRAND_DIRS, R2                         ; 2354
                    53     0450  C4 D0 00023        MOVL    GRAND_FILES, R3                        ; 2356
    05       02     A4           03 E0 00028        BBS     #3, QUAL_FLAGS+2, 1$                   ; 2348
    76       01     A4           01 E1 0002D        BBC     #1, QUAL_FLAGS+1, 13$                  ;
    05       02     A4           04 E0 00032 1$:    BBS     #4, QUAL_FLAGS+2, 2$                   ; 2351
    2C       01     A4           01 E1 00037        BBC     #1, QUAL_FLAGS+1, 6$                   ;
                    01           52 D1 0003C 2$:    CMPL    R2, #1                                 ; 2354
                                 12 13 0003F        BEQL    3$                                     ;
                    7E     0448  C4 7D 00041        MOVQ    GRAND_USED, -(SP)                      ; 2356
                                 0C BB 00046        PUSHR   #^M<R2,R3>                             ;
                             0C  A5 9F 00048        PUSHAB  P.AIW                                  ;
                      00000000G  8F DD 0004B        PUSHL   #DIR$_GTOTSIZALL                       ;
                                 10 11 00051        BRB     4$                                     ;
                    7E     0448  C4 7D 00053 3$:    MOVQ    GRAND_USED, -(SP)                      ; 2358
                                 0C BB 00058        PUSHR   #^M<R2,R3>                             ;
                             18  A5 9F 0005A        PUSHAB  P.AIY                                  ;
                      00000000G  8F DD 0005D        PUSHL   #DIR$_GTOTSIZALL1                      ;
                    66           06 FB 00063 4$:    CALLS   #6, DIR$OUTPUT                         ;
                                 60 11 00066 5$:    BRB     16$                                    ; 2351
                    01           52 D1 00068 6$:    CMPL    R2, #1                                 ; 2362
                                 1C 13 0006B        BEQL    9$                                     ;
    06       02     A4           06 E1 0006D        BBC     #6, QUAL_FLAGS+2, 7$                   ; 2365
                           0448  C4 DD 00072        PUSHL   GRAND_USED                             ;
                                 04 11 00076        BRB     8$                                     ;
                           044C  C4 DD 00078 7$:    PUSHL   GRAND_ALLOC                            ;
                                 0C BB 0007C 8$:    PUSHR   #^M<R2,R3>                             ;
                             24  A5 9F 0007E        PUSHAB  P.AJA                                  ;
                      00000000G  8F DD 00081        PUSHL   #DIR$_GTOTSIZ                          ;
                                 1A 11 00087        BRB     12$                                    ;
    06       02     A4           06 E1 00089 9$:    BBC     #6, QUAL_FLAGS+2, 10$                  ; 2368
                           0448  C4 DD 0008E        PUSHL   GRAND_USED                             ;
                                 04 11 00092        BRB     11$                                    ;
                           044C  C4 DD 00094 10$:   PUSHL   GRAND_ALLOC                            ;
                                 0C BB 00098 11$:   PUSHR   #^M<R2,R3>                             ;
                             30  A5 9F 0009A        PUSHAB  P.AJC                                  ;
                      00000000G  8F DD 0009D        PUSHL   #DIR$_GTOTSIZ1                         ;
                    66           05 FB 000A3 12$:   CALLS   #5, DIR$OUTPUT                         ;
                                 20 11 000A6        BRB     16$                                    ; 2348
                    01           52 D1 000A8 13$:   CMPL    R2, #1                                 ; 2373
                                 0D 13 000AB        BEQL    14$                                    ;
                                 0C BB 000AD        PUSHR   #^M<R2,R3>                             ; 2374
                             3C  A5 9F 000AF        PUSHAB  P.AJE                                  ;
                      00000000G  8F DD 000B2        PUSHL   #DIR$_GTOTNOSIZ                        ;
                                 0B 11 000B8        BRB     15$                                    ;
                                 0C BB 000BA 14$:   PUSHR   #^M<R2,R3>                             ; 2375
                             48  A5 9F 000BC        PUSHAB  P.AJG                                  ;
                      00000000G  8F DD 000BF        PUSHL   #DIR$_GTOTNOSIZ1                       ;
                    66           04 FB 000C5 15$:   CALLS   #4, DIR$OUTPUT                         ;
                    50           01 D0 000C8 16$:   MOVL    #1, R0                                 ; 2378
                                    04 000CB        RET                                            ; 2380

; Routine Size:  204 bytes,    Routine Base:  $CODE$ + 1A61
; 1990          2381  1 GLOBAL ROUTINE DIR$APPEND (MESSAGE_CODE, CONTROL_STRING, ARGS) =
; 1991          2382  1
; 1992          2383  1 !++
; 1993          2384  1 !
; 1994          2385  1 ! FUNCTIONAL DESCRIPTION:
; 1995          2386  1 !
; 1996          2387  1 !       This routine accepts, as input, an $FAO control string and any
; 1997          2388  1 !       arguments to be formatted by the control string.  The formatted
; 1998          2389  1 !       line is then appended to the current line.
; 1999          2390  1 !
; 2000          2391  1 ! CALLING SEQUENCE:
; 2001          2392  1 !       DIR$APPEND (ARG1, ARG2, ..., ARGn)
; 2002          2393  1 !
; 2003          2394  1 ! INPUT PARAMETERS:
; 2004          2395  1 !       ARG1: message code for the text to display
; 2005          2396  1 !       ARG2: address of the $FAO control string
; 2006          2397  1 !       ARG3 - ARGn: arguments to be formatted
; 2007          2398  1 !
; 2008          2399  1 ! IMPLICIT INPUTS:
; 2009          2400  1 !       none
; 2010          2401  1 !
; 2011          2402  1 ! OUTPUT PARAMETERS:
; 2012          2403  1 !       none
; 2013          2404  1 !
; 2014          2405  1 ! IMPLICIT OUTPTUS:
; 2015          2406  1 !       none
; 2016          2407  1 !
; 2017          2408  1 ! ROUTINE VALUE:
; 2018          2409  1 !       1
; 2019          2410  1 !
; 2020          2411  1 ! SIDE EFFECTS:
; 2021          2412  1 !       none
; 2022          2413  1 !
; 2023          2414  1 !--
; 2024          2415  1
; 2025          2416  2 BEGIN
; 2026          2417  2
; 2027          2418  2 MAP
; 2028          2419  2         CONTROL_STRING  : REF $BBLOCK;          ! Address of the control string
; 2029          2420  2
; 2030          2421  2 LOCAL
; 2031          2422  2         FAO_CTL_STRING  : REF $BBLOCK,          ! Addr of $FAO control string
; 2032          2423  2         MESSAGE_DESC    : $BBLOCK [DSC$C_S_BLN],        ! Message text descr
; 2033          2424  2         MESSAGE_TEXT    : VECTOR [256, BYTE],   ! Message text
; 2034          2425  2         LOCAL_DESC      : $BBLOCK [DSC$C_S_BLN];        ! Local copy of line descriptor
; 2035          2426  2
; 2036          2427  2 ! If there is a message code present, get the message text via a $GETMSG.
; 2037          2428  2 ! Otherwise, use the descriptor supplied.
; 2038          2429  2
; 2039          2430  2 IF .MESSAGE_CODE NEQ 0
; 2040          2431  2 THEN
; 2041          2432  3     BEGIN
; 2042          2433  3     CH$FILL (0, DSC$C_S_BLN, MESSAGE_DESC);
; 2043          2434  3     MESSAGE_DESC[DSC$W_LENGTH] = 256;
; 2044          2435  3     MESSAGE_DESC[DSC$A_POINTER] = MESSAGE_TEXT;
; 2045        P 2436  3     $GETMSG (MSGID = .MESSAGE_CODE,
; 2046        P 2437  3             MSGLEN = MESSAGE_DESC[DSC$W_LENGTH],
; 2047        P 2438  3                  BUFADR = MESSAGE_DESC,
; 2048          2439  3                  FLAGS = 1);
; 2049          2440  3         FAO_CTL_STRING = MESSAGE_DESC;
; 2050          2441  3         END
; 2051          2442  2     ELSE FAO_CTL_STRING = .CONTROL_STRING;
; 2052          2443  2
; 2053          2444  2     ! Format the line.
; 2054          2445  2
; 2055          2446  2     CH$FILL (0, DSC$C_S_BLN, LOCAL_DESC);
; 2056          2447  2     LOCAL_DESC[DSC$W_LENGTH] = 1024 - .LINE_DESC[DSC$W_LENGTH];
; 2057          2448  2     LOCAL_DESC[DSC$A_POINTER] = LINE_BUFFER[.LINE_DESC[DSC$W_LENGTH]];
; 2058          2449  2
; 2059        P 2450  2     $FAOL (CTRSTR = .FAO_CTL_STRING,
; 2060        P 2451  2            OUTLEN = LOCAL_DESC,
; 2061        P 2452  2            OUTBUF = LOCAL_DESC,
; 2062          2453  2            PRMLST = ARGS);
; 2063          2454  2
; 2064          2455  2     LINE_DESC[DSC$W_LENGTH] = .LINE_DESC[DSC$W_LENGTH] + .LOCAL_DESC[DSC$W_LENGTH];
; 2065          2456  2
; 2066          2457  2     RETURN 1;
; 2067          2458  2
; 2068          2459  1     END;                                                     ! End of routine DIR$APPEND


                                                                 .EXTRN  SYS$FAOL

                                               00FC 00000        .ENTRY  DIR$APPEND, Save R2,R3,R4,R5,R6,R7                  ; 2381
                          57 00000000'   EF   9E 00002           MOVAB   LINE_DESC, R7                                       ;
                          5E      FEF0   CE   9E 00009           MOVAB   -272(SP), SP                                        ;
                                    04   AC   D5 0000E           TSTL    MESSAGE_CODE                                        ; 2430
                                         2B   13 00011           BEQL    1$                                                  ;
      08         00       6E             00   2C 00013           MOVC5   #0, (SP), #0, #8, MESSAGE_DESC                      ; 2433
                                    F8   AD      00018                                                                       ;
                    F8    AD      0100   8F   B0 0001A           MOVW    #256, MESSAGE_DESC                                  ; 2434
                    FC    AD        08   AE   9E 00020           MOVAB   MESSAGE_TEXT, MESSAGE_DESC+4                        ; 2435
                          7E             01   7D 00025           MOVQ    #1, -(SP)                                           ; 2439
                                    F8   AD   9F 00028           PUSHAB  MESSAGE_DESC                                        ;
                                    F8   AD   9F 0002B           PUSHAB  MESSAGE_DESC                                        ;
                                    04   AC   DD 0002E           PUSHL   MESSAGE_CODE                                        ;
                 00000000G  00           05   FB 00031           CALLS   #5, SYS$GETMSG                                      ;
                            56      F8   AD   9E 00038           MOVAB   MESSAGE_DESC, FAO_CTL_STRING                        ; 2440
                                         04   11 0003C           BRB     2$                                                  ; 2430
                            56      08   AC   D0 0003E 1$:       MOVL    CONTROL_STRING, FAO_CTL_STRING                      ; 2442
      08         00         6E           00   2C 00042 2$:       MOVC5   #0, (SP), #0, #8, LOCAL_DESC                        ; 2446
                                         6E      00047                                                                       ;
                 6E    0400  8F          67   A3 00048           SUBW3   LINE_DESC, #1024, LOCAL_DESC                        ; 2447
                             50     08   A7   9E 0004E           MOVAB   LINE_BUFFER, R0                                     ; 2448
                             51          67   3C 00052           MOVZWL  LINE_DESC, R1                                       ;
            04   AE          50          51   C1 00055           ADDL3   R1, R0, LOCAL_DESC+4                                ;
                                    0C   AC   9F 0005A           PUSHAB  ARGS                                                ; 2453
                                    04   AE   9F 0005D           PUSHAB  LOCAL_DESC                                          ;
                                    08   AE   9F 00060           PUSHAB  LOCAL_DESC                                          ;
                                         56   DD 00063           PUSHL   FAO_CTL_STRING                                      ;
                 00000000G  00           04   FB 00065           CALLS   #4, SYS$FAOL                                        ;
                            67           6E   A0 0006C           ADDW2   LOCAL_DESC, LINE_DESC                               ; 2455
                            50           01   D0 0006F           MOVL    #1, R0                                              ; 2457
```

```
                                        04 00072         RET                                                   ; 2459

; Routine Size:  115 bytes,    Routine Base:  $CODE$ + 1B2D


; 2069            2460  1
; 2070            2461  1 END
; 2071            2462  0 ELUDOM




;                                 PSECT SUMMARY
;
;       Name                     Bytes                        Attributes
;
;  DIR$COMMON                       2164  NOVEC,  WRT,  RD ,NOEXE,NOSHR,  LCL,  REL,  OVR,NOPIC,ALIGN(0)
;  $PLIT$                           1560  NOVEC,NOWRT,  RD ,NOEXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
;  $OWN$                              68  NOVEC,  WRT,  RD ,NOEXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
;  $CODE$                           7072  NOVEC,NOWRT,  RD ,  EXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)




;                           Library Statistics
;
;                                            -------- Symbols --------      Pages       Processing
;       File                                 Total    Loaded   Percent      Mapped      Time
;
;  _$255$DUA28:[SYSLIB]LIB.L32;1             18619       237         1      1000          00:01.7





;                                  COMMAND QUALIFIERS

;       BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/LIS=LIS$:DISPLAY/OBJ=OBJ$:DISPLAY MSRC$:DISPLAY/UPDATE=(ENH$:DISPLAY)

; Size:          7072 code + 3792 data bytes
; Run Time:        02:08.7
; Elapsed Time:    06:07.6
; Lines/CPU Min:    1147
; Lexemes/CPU-Min: 24552
; Memory Used:  898 pages
; Compilation Complete
```

0104 AH-BT13A-SE
VAX/VMS V4.0

DIGITAL EQUIPMENT CORPORATION
CONFIDENTIAL AND PROPRIETARY